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2.3 TERRESTRIAL ECOLOGY

2.3 TERRESTRIAL ECOLOGICAL STUDIES

SIXTH QUARTERLY DATA REPORT
FOR THE
TERRESTRIAL BASELINE DATA ACCUMULATION PROGRAM
RIO BLANCO OIL SHALE PROJECT

submitted to

RIO BLANCO OIL SHALE PROJECT

Denver, Colorado

from

ECOLOGY CONSULTANTS, INCORPORATED

Fort Collins, Colorado

April, 1976

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EXECUTIVE SUMMARY

Ecology Consultants, Incorporated has been contracted to perform a Terrestrial Baseline Data Accumulation Program for RBOSP on Tract C-a. Communication of the scope and results of that program is accomplished in a series of quarterly reports. This sixth report in that series contains summarized results and preliminary interpretations (where feasible) for those terrestrial programs conducted during the winter quarter, December 1975 through February 1976. Future quarterly reports will include an update on the progress of ongoing terrestrial programs for each subsequent quarter as well as any approved program modifications. Definitive interpretations and a synthesis of program results for the first year of study were developed in the Second Annual Report (December 1975).

INTRODUCTION

This report presents and summarizes terrestrial baseline data gathered during the sixth quarter (December 1975 through February 1976) on Oil Shale Tract C-a and its environs. Winter quarter data are reported and discussed for small mammal, large mammal, winter track count, avifauna, mammalian predator, and domestic livestock program elements. Limited interpretation of those data is provided wherever relevant. All raw data reported for the winter quarter are organized in appendices which appear as separate sub-sections under each of the major categories of investigation.

2.3 TERRESTRIAL STUDIES

2.3.1 Vegetation

Vegetation data were not collected for the reporting quarter December 1975 through February 1976.

2.3.2 Grazing Exclosure

2.3.2.1 Introduction

No changes have been made since the Second Annual Report. See Section 7.1.B.1 in the Second Annual Report for the objectives of the grazing exclosure study.

2.3.2.2 Methods

No changes have been made since the Second Annual Report. See Section 7.1.B.2 in the Second Annual Report for specific methods used in the grazing exclosure program.

2.3.2.3 Results

Analysis of the photoplot photographs was completed during this reporting quarter. This analysis was accomplished by counting on a background grid the number of squares totally or partially obscured by the plant in the photos. The results of the analysis are shown in Table 2.3-1.

Plants in the photoplots are coded alphanumerically. The first symbol corresponds to the grazing exclosure sampling compartment (A, B, C, or D), and the second symbol represents the number assigned the individual plant within each compartment.

The shrub photoplot counts have been completed and filed as baseline data for comparison with results from future sampling periods. These data have no immediate or independent application prior to acquisition of future comparative data. When such data are collected, the change in the number of squares observed will serve as an index of net growth (when change is positive) or utilization (when change is negative).

2.3.3 Small Mammals

2.3.3.1 Introduction

No changes have been implemented since the Second Annual Report. See Section 7.2.A.1 in the Second Annual Report for specific objectives of the small mammal program.

Table 2.3-1

GRAZING EXCLOSURE SHRUB PHOTOPLOT RESULTS
FOR SUMMER 1975 FOR RBOSP

Species	Plant #	Total Squares Obscured
Artemesia tridentata (ARTR)	A-1	527
	A-2	336
	A-3	566
	B-1	595
	B-2	100
	B-3	380
	C-1	345
	C-2	499
	C-3	367
	D-1	320
	D-2	288
	D-3	355
Purshia tridentata (PUTR)	B-1	346
	B-2	461
	B-3	400
	C-1	299
	C-2	383
	C-3	149
	D-1	181
	D-2	332
	D-3	71

2.3.3.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.A.2 in the Second Annual Report for specific methods used in small mammal sampling.

2.3.3.3 Results

2.3.3.3.1 Live Trapping

Small mammal live trapping operations were conducted during December 12-17, 1975. Due to adverse weather and road conditions trapping was terminated on grid 5 (Mixed Brush) after three trap nights and on grids 7 (Upland Meadow), E (Mixed Brush), F (Douglas-fir), and G (Aspen) after two trap nights. All other grids were sampled for the entire five trap nights. Eighty-eight individuals comprising seven species were captured during the winter trapping operations. The species captured and their percent relative abundance based on number captured per 100 trap nights are shown in Table 2.3-2. The trapping results for each species at each grid are given in Tables 2.3-3 through 2.3-9.

The deer mouse (Peromyscus maniculatus) was the most abundant small mammal captured during December and accounted for over 78% of the total relative abundance. It was represented in samples from all grids except grid 5 (Mixed Brush) and was most abundant on grid 7 (Upland Meadow) (24.24 individuals/100 trap nights) and grid E (Mixed Brush) (15.15 individuals/100 trap nights).

The red-backed vole (Clethrionomys gapperi) was the second most frequently trapped small mammal during December, and it accounted for almost 13% of the total capture success. As in previous trapping periods, this species was encountered only on grids established in Douglas-fir and Aspen vegetation and was most abundant in Aspen (19.61 individuals/100 trap nights).

The long-tailed vole (Microtus longicaudus) and the sagebrush vole (Lagurus curtatus) were the only other small mammal species captured on more than one grid during December. These species accounted for 3.37% and 2.31% of the total relative abundance, respectively.

The Colorado Chipmunk (Eutamias quadrivittatus), bushy-tailed woodrat (Neotoma cinerea) and Montane vole (Microtus montanus) were all represented by only one individual. Together, these three species accounted for only 3.15% of the total relative abundance for December.

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	D-3	355
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	B-2	461
	B-3	400
	C-1	299
	C-2	383
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The Colorado Chipmunk (Eutamias quadrivittatus), bushy-tailed woodrat (Neotoma cinerea) and Montane vole (Microtus montanus) were all represented by only one individual. Together, these three species accounted for only 3.15% of the total relative abundance for December.

Table 2.3-2 Summary of trapping results for all small mammal species captured at all grids during sample period 6, December 12-17, 1975 for RBOSP

Species	Individuals captured per 100 trap nights 1/	% Relative Abundance 2/
Eutamias quadrivittatus (Colorado chipmunk)	0.05	1.05
Peromyscus maniculatus (deer mouse)	3.73	78.52
Neotoma cinerea (Bushy-tailed woodrat)	0.05	1.05
Clethrionomys gapperi (Red-backed vole)	0.60	12.63
Microtus montanus (Montane vole)	0.05	1.05
Microtus longicaudus (Long-tailed vole)	0.16	3.37
Lagurus curtatus (Sagebrush vole)	0.11	2.31

1/ Trap night = one trap baited and set for 24 hours.

2/ (Number of individuals of each species/Number of individuals of all species) X 100.

Table 2.3-3 Summary of trapping results for Eutamias quadrivittatus (Colorado chipmunk) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	0.00	0.0	0.00	0.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.61	100.0	1.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	0.00	0.0	0.00	0.00	0.00	0.00
G	Aspen	0.00	0.0	0.00	0.00	0.00	0.00
	AVERAGE	0.05					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Table 2.3-4 Summary of trapping results for Peromyscus maniculatus (deer mouse) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.61	0.9	0.00	0.00	1.00	0.00
2	Sagebrush	0.61	0.9	0.00	0.00	0.00	1.00
3	Rabbitbrush	3.64	5.1	1.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	6.06	8.5	0.30	0.20	0.10	0.40
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	3.03	4.3	0.40	0.40	0.20	0.00
7	Upland meadow	24.24	34.2	0.69	0.31	0.00	0.00
A	Greasewood-sagebrush	1.21	1.7	1.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	4.85	6.8	0.63	0.25	0.00	0.13
C	Pinyon-juniper (north slope)	1.82	2.6	1.00	0.00	0.00	0.00
D	Sagebrush	0.61	0.9	0.00	1.00	0.00	0.00
E	Mixed brush	15.15	21.4	-	-	-	-
F	Douglas fir	6.06	8.5	0.50	0.25	0.00	0.25
G	Aspen	3.03	4.3	0.50	0.50	0.00	0.00
	AVERAGE	3.73					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100
\- Positive sex identification could not be made in the field

Table 2.3-5 Summary of trapping results for Neotoma cinerea (bushy-tailed wood rat) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	0.61	100.0	0.00	1.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.00	0.0	0.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	0.00	0.0	0.00	0.00	0.00	0.00
G	Aspen	0.00	0.0	0.00	0.00	0.00	0.00
	AVERAGE	0.05					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Table 2.3-6 Summary of trapping results for Clethrionomys gapperi (red-backed vole) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	0.00	0.0	0.00	0.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.00	0.0	0.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	6.06	36.4	0.25	0.75	0.00	0.00
G	Aspen	10.61	63.6	0.57	0.43	0.00	0.00
	AVERAGE	0.60					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Table 2.3-7 Summary of trapping results for Microtus montanus (montane vole) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.61	100.0	0.00	0.00	0.00	1.00
B	Pinyon-juniper (south slope)	0.00	0.0	0.00	0.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.00	0.0	0.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	0.00	0.0	0.00	0.00	0.00	0.00
G	Aspen	0.00	0.0	0.00	0.00	0.00	0.00
	AVERAGE	0.05					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Table 2.3-8 Summary of trapping results for Microtus longicaudus (long-tailed vole) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.61	16.7	1.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	0.00	0.0	0.00	0.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.00	0.0	0.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	0.00	0.0	0.00	0.00	0.00	0.00
G	Aspen	3.03	83.3	1.00	0.00	0.00	0.00
	AVERAGE	0.16					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Table 2.3-9 Summary of trapping results for Lagurus curtatus (sagebrush vole) on all small mammal grids during sample period 6, Dec. 12-17, 1975, for RBOSP

Grid	Vegetation type	# Individuals Captured Per 100 Trap Nights *	Relative Abundance **	Proportion Captured Adult M	Adult F	Juvenile M	Juvenile F
1	Bottomland meadow	0.00	0.0	0.00	0.00	0.00	0.00
2	Sagebrush	0.61	50.0	1.00	0.00	0.00	0.00
3	Rabbitbrush	0.00	0.0	0.00	0.00	0.00	0.00
4	Pinyon-juniper/mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
5	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
6	Pinyon-juniper/sagebrush	0.61	50.0	0.00	1.00	0.00	0.00
7	Upland meadow	0.00	0.0	0.00	0.00	0.00	0.00
A	Greasewood-sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
B	Pinyon-juniper (south slope)	0.00	0.0	0.00	0.00	0.00	0.00
C	Pinyon-juniper (north slope)	0.00	0.0	0.00	0.00	0.00	0.00
D	Sagebrush	0.00	0.0	0.00	0.00	0.00	0.00
E	Mixed brush	0.00	0.0	0.00	0.00	0.00	0.00
F	Douglas fir	0.00	0.0	0.00	0.00	0.00	0.00
G	Aspen	0.00	0.0	0.00	0.00	0.00	0.00
	AVERAGE	0.11					

* 1 trap night = one trap baited and set for 24 hours
** (# of individuals of each species / # of individuals of all species) X 100

Average adult weights for small mammal species captured in each grid are shown in Tables 2.3-10 through 2.3-15. Only the initial capture weights were used in average weight determination. The single montane vole captured escaped before body weight could be measured.

Average weights for the deer mouse and the red-backed vole decreased slightly from the previous sampling period (September-October, 1975). This weight decrease might be due to the recruitment of juveniles into the population after September and/or a reduced food supply. The paucity of weight data for the other species encountered during December precludes formulation of conclusions concerning seasonal weight changes at this time.

Shannon-Weiner species diversity indices are presented for each grid in Table 2.3-16. As expected, the diversity indices are low for all grids. In fact, half the grids exhibited a value of 0.000, which indicates one or no species were captured. Three species were represented in samples from both grid A (Greasewood-sagebrush) and grid G (Aspen), but because of a more equitable distribution of individuals among species, and perhaps a greater trapping effort, the former grid showed the highest species diversity for December. All other grid samples with non-zero diversity indices contained only two species.

2.3.3.3.2 Pitfall Trapping

Pitfall trapping was conducted during live trapping operations in December. However, pitfall traps were not operated at Site 1 (Bottomland Meadow), Site 7 (Upland Meadow), Site 8 (Riparian), Site E (Mixed Brush), Site F (Douglas-fir) and Site G (Aspen) due to adverse weather and road conditions. Two shrews were captured in pitfalls established at Site 3 (Rabbitbrush). The species identification of these shrews has been confirmed as Sorex cinereus. Pitfalls operated at the other sites yielded no captures.

2.3.3.3.3 Stomach Analysis

Removal trap lines were established in all the major vegetation types except aspen and mixed brush during December. However, trap success was low: only two deer mice (one from sagebrush and one from greasewood-sagebrush) were taken. Stomachs of all specimens examined contained only seeds.

2.3.3.3.4 Night Spotlight Census

Night spotlight surveys for medium-sized mammals, particularly lagomorphs, were conducted on the nights of February 26 and 28. However, the census route had to be truncated due to the adverse road conditions along Cathedral Bluffs. Although a number

Table 2.3-10 Average live weights (gm) for adult Eutamias quadrivittatus (Colorado chipmunk) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	0			0			0		
3	Rabbitbrush	0			0			0		
4	Pinyon-juniper/mixed brush	0			0			0		
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	0			0			0		
7	Upland meadow	0			0			0		
A	Greasewood-sagebrush	0			0			0		
B	Pinyon-juniper (south slope)	0			0			0		
C	Pinyon-juniper (north slope)	1	52.0		0			1	52.0	
D	Sagebrush	0			0			0		
E	Mixed brush	0			0			0		
F	Douglas fir	0			0			0		
G	Aspen	0			0			0		
	SUMMARY--ALL GRIDS	1	52.0		0			1	52.0	

Table 2.3-11 Average live weights (gm) for adult Peromyscus maniculatus (deer mouse) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	0			0			0		
3	Rabbitbrush	6	16.7	0.6	0			6	16.7	0.6
4	Pinyon-juniper/mixed brush	3	14.0	0.6	2	17.0	0.0	5	15.2	0.8
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	2	17.5	0.5	2	14.0	0.0	4	15.8	1.0
7	Upland meadow	9	16.1	0.5	5	14.8	0.9	14	15.6	0.5
A	Greasewood-sagebrush	2	18.0	1.0	0			2	18.0	1.0
B	Pinyon-juniper (south slope)	5	17.6	1.1	2	15.0	1.0	7	16.9	0.9
C	Pinyon-juniper (north slope)	3	14.3	1.3	0			3	14.3	1.3
D	Sagebrush	0			1	17.0		1	17.0	
E	Mixed brush	7	13.9	0.5	2	14.0	1.0	9	13.9	0.4
F	Douglas fir	2	13.0	0.0	1	16.0		3	14.0	1.0
G	Aspen	1	13.0		1	13.0		2	13.0	0.0
	SUMMARY--ALL GRIDS	40	15.6	0.3	16	15.0	0.4	56	15.4	0.3

Table 2.3-12 Average live weights (gm) for adult Neotoma cinerea (bushy-tailed wood rat) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	0			0			0		
3	Rabbitbrush	0			0			0		
4	Pinyon-juniper/mixed brush	0			0			0		
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	0			0			0		
7	Upland meadow	0			0			0		
A	Greasewood-sagebrush	0			0			0		
B	Pinyon-juniper (south slope)	0			1	224.0		1	224.0	
C	Pinyon-juniper (north slope)	0			0			0		
D	Sagebrush	0			0			0		
E	Mixed brush	0			0			0		
F	Douglas fir	0			0			0		
G	Aspen	0			0			0		
	SUMMARY--ALL GRIDS	0			1	224.0		1	224.0	

Table 2.3-13 Average live weights (gm) for adult Clethrionomys gapperi (red-backed vole) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	0			0			0		
3	Rabbitbrush	0			0			0		
4	Pinyon-juniper/mixed brush	0			0			0		
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	0			0			0		
7	Upland meadow	0			0			0		
A	Greasewood-sagebrush	0			0			0		
B	Pinyon-juniper (south slope)	0			0			0		
C	Pinyon-juniper (north slope)	0			0			0		
D	Sagebrush	0			0			0		
E	Mixed brush	0			0			0		
F	Douglas fir	1	12.0		3	12.7	0.3	4	12.5	0.3
G	Aspen	4	11.5	0.5	3	12.0	0.0	7	11.7	0.3
	SUMMARY--ALL GRIDS	5	11.6	0.4	6	12.3	0.2	11	12.0	0.2

Table 2.3-14 Average live weights (gm) for adult Microtus longicaudus (long-tailed vole) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	0			0			0		
3	Rabbitbrush	0			0			0		
4	Pinyon-juniper/mixed brush	0			0			0		
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	0			0			0		
7	Upland meadow	0			0			0		
A	Greasewood-sagebrush	1	20.0		0			1	20.0	
B	Pinyon-juniper (south slope)	0			0			0		
C	Pinyon-juniper (north slope)	0			0			0		
D	Sagebrush	0			0			0		
E	Mixed brush	0			0			0		
F	Douglas fir	0			0			0		
G	Aspen	2	20.0	1.0	0			2	20.0	1.0
	SUMMARY--ALL GRIDS	3	20.0	0.6	0			3	20.0	0.6

Table 2.3-15 Average live weights (gm) for adult Lagurus curtatus (sagebrush vole) on all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid	Vegetation type	MALE n	MALE Average	MALE Std. Error	FEMALE n	FEMALE Average	FEMALE Std. Error	ALL ADULTS n	ALL ADULTS Average	ALL ADULTS Std. Error
1	Bottomland meadow	0			0			0		
2	Sagebrush	1	14.0		0			1	14.0	
3	Rabbitbrush	0			0			0		
4	Pinyon-juniper/mixed brush	0			0			0		
5	Mixed brush	0			0			0		
6	Pinyon-juniper/sagebrush	0			1	14.0		1	14.0	
7	Upland meadow	0			0			0		
A	Greasewood-sagebrush	0			0			0		
B	Pinyon-juniper (south slope)	0			0			0		
C	Pinyon-juniper (north slope)	0			0			0		
D	Sagebrush	0			0			0		
E	Mixed brush	0			0			0		
F	Douglas fir	0			0			0		
G	Aspen	0			0			0		
	SUMMARY--ALL GRIDS	1	14.0		1	14.0		2	14.0	0.0

Table 2.3-16 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all small mammal grids during sample period 6, December 12-17, 1975, for RBOSP

Grid Designation	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	0.000	0.000	0.000	0.000	-
2	Sagebrush	0.693	0.443	0.000	0.693	1.000
3	Rabbitbrush	0.000	0.000	0.000	0.000	-
4	Pinyon-juniper/mixed brush	0.000	0.000	0.000	0.000	-
5	Mixed brush	0.000	-	-	-	-
6	Pinyon-juniper/sagebrush	0.451	0.367	0.060	0.693	0.650
7	Upland meadow	0.000	0.000	0.000	0.000	-
A	Greasewood-sagebrush	1.040	0.790	0.030	1.099	0.946
B	Pinyon-juniper (south slope)	0.349	0.293	0.047	0.693	0.503
C	Pinyon-juniper (north slope)	0.562	0.437	0.057	0.693	0.811
D	Sagebrush	0.000	0.000	0.000	0.000	-
E	Mixed brush	0.000	0.000	0.000	0.000	-
F	Douglas fir	0.693	0.631	0.000	0.693	1.000
G	Aspen	0.908	0.817	0.033	1.099	0.826

- Insufficient data for computation

of deer were seen during this survey, the only lagomorphs observed were the cottontail (Sylvilagus sp.) and one white-tailed jackrabbit (Lepus townsendii).

2.3.3 Small Mammals

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET FF

Grid Name Bottomland Meadow Grid 1 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (1600) Date, time traps checked 13 Dec 1975 (1600)

Last toe clip # used on previous day 0240 Field Analyst(s) Price | Hawkins

Project 83 RBOSP QA Check JB 12/14 dcw 1/5/76

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
A-13	PEMA	0241	M	---	17	T	---

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: 555.1.2.1
PF

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Rotational Meadow Grid 1 Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (1600) Date, time traps checked 14 Dec 1975 (1536)

Last toe clip # used on previous day 0250 Field Analyst(s) Peyton / Harding

Project 83RBOSP QA Check MB 12/19 tmw 1/5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc

RBOSP PROGRESS REPORT

File No: 83.5.1.2.1

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Palmetto-Hwy Grid 1 Sample Period 6 Trap Night 3

Date, time traps set 14 Dec 1983 (1327) Date, time traps checked 15 Dec 1983 1[illegible]

Last toe clip # used on previous day 0250 Field Analyst(s) Harding Lewis

Project 83 RBOSP QA Check JB 12/19 Luna 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc

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File No: [illegible]

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 1 Sample Period 6 Trap Night 4

Date, time traps set [illegible] Date, time traps checked 16 Dec 1915 (1215)

Last toe clip # used on previous day [illegible] Field Analyst(s) [illegible]

Project RBSPBASP QA Check AB 12/19 [illegible] 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet ___ of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 1 Sample Period 6 Trap Night 5

Date, time traps set 16 Oct 1975 (1015) Date, time traps checked [illegible]

Last toe clip # used on previous day [illegible] Field Analyst(s) [illegible]

Project 231RBOSP QA Check SB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES	-	-	TRAP	SPRUNG	(EMPTY)	

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Hoh (flat) Grid 2 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1995 (1530) Date, time traps checked 13 Dec 1995 (1530)

Last toe clip # used on previous day 2004 Field Analyst(s) Hanlon / Reeves

Project 93 RBDSP QA Check JB 12/19 bmw 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-3	PCMA	2004	F	J	10	NR	-

File No: 83.0.1.2.2

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Sage (flat) Grid 2 Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (1545) Date, time traps checked 14 Dec 1975 (1020)

Last toe clip # used on previous day 0404 Field Analyst(s) Reyes / Hawkins

Project 83.RBOSP QA Check JB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

070/060175

Sheet 1 of 1 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 2 Sample Period 6 Trap Night 3

Date, time traps set 14 Dec 1975 (1500) Date, time traps checked 15 Dec 1975 [illegible]

Last toe clip # used on previous day 0-10-1 Field Analyst(s) [illegible]

Project RBOSP QA Check JB 12/19 bm 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] (Flat) Grid 2 Sample Period 6 Trap Night 4

Date, time traps set [illegible] (P.M.) Date, time traps checked [illegible] 1975 (1700)

Last toe clip # used on previous day 0004 Field Analyst(s) [illegible]

Project [illegible] QA Check JB 12/19 trm 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
1-4	LACU	0405N	M	A	14	T	—

*Key taxonomic characters, physical condition of animal, etc.

070/060175

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name [illegible] Grid _____ Sample Period _____ Trap Night _____

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day 105N Field Analyst(s) [illegible]

Project [illegible] QA Check JB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	MC	[illegible]	[illegible]		[illegible]	PUWED	

File No: 83.5.1.2.1

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Rabbitbrush Grid 3 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (1200) Date, time traps checked 13 Dec 1975 (1200)

Last toe clip # used on previous day 2142 Field Analyst(s) Page / Hayden

Project 83 RBOSP QA Check HS 12/19 (mm) 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-4	PEMA	2011N	M	A	16	I	—
C-6	PEMA	1352	M	A	15	I	—
A-10	PEMA	2021	M	A	16	D	—
C-9	PEMA	1433	M	A	18	I	—
C-11	PEMA	2012N	M	A	19	I	—
C-13	PEMA	1334	M	A	16	D	—

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Rabbitbrush Grid 3 Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (1230) Date, time traps checked 14 Dec 1975 (1200)

Last toe clip # used on previous day 2012 Field Analyst(s) Reyes / Harding

Project 63 RBOSP QA Check JB 12/19 -turn 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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File No: _____

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Rabbitbrush Grid 3 Sample Period 6 Trap Night 2 - 3

Date, time traps set 14 Dec 1995 (1200) Date, time traps checked 15 Dec 1995 1200

Last toe clip # used on previous day 2612 Field Analyst(s) [illegible]

Project 63RBOSP QA Check JB 12/19 time 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid [illegible] Sample Period [illegible] Trap Night 4

Date, time traps set [illegible] 1100 Date, time traps checked [illegible] 1100

Last toe clip # used on previous day 2012 Field Analyst(s) [illegible]

Project [illegible] QA Check [illegible] 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	No Captures						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 3 Sample Period 1 Trap Night 5

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day [illegible] Field Analyst(s) [illegible]

Project [illegible] QA Check JS 12/19 Trans 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]						

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name PJ/Mixed Brush Grid 4 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 1230 Date, time traps checked 13 Dec 1975 (1300)

Last toe clip # used on previous day 1050 Field Analyst(s) Rego/Hardies

Project 23 P.BOSP QA Check JB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
B-7	PEMA	1442 N	F	J	14	I	—
B-6	PEMA	1443 N	M	A	14	A	Slight [illegible]
C-4	PEMA	1005	F	A	17	A	—
A-6	PEMA	1444 N	M	J	13	T	—
A-1	PEMA	1446 N	F	J	12	I	—
C-1	PEMA	1451 N	F	A	17	T	—

*Key taxonomic characters, physical condition of animal, etc.

REOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name PJ/Mixed Conifer Grid 4 Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1995 (1500) Date, time traps checked 14 Dec 1995 (1140)

Last toe clip # used on previous day 1445N Field Analyst(s) [illegible]

Project 82. RBOSP QA Check JB 12/19 Lam 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
B-10	PEMA	1190N	F	J	15	"	—
A-6	PEMA	1207N	F	J	12	F	"

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name PJ / Mixed Brush Grid 4 Sample Period 6 Trap Night 3

Date, time traps set 14 Dec. 19:[illegible] Date, time traps checked 15 Dec. [illegible]

Last toe clip # used on previous day 1200N Field Analyst(s) [illegible] / Baker

Project PJ RBOSP QA Check JB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]	[illegible]					

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 4 Sample Period 6 Trap Night 4

Date, time traps set [illegible] Date, time traps checked 16 [illegible] 1035

Last toe clip # used on previous day _____ Field Analyst(s) [illegible]

Project [illegible] QA Check JB 12/19 -hms 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
1-4	PEMA	0101	M	A	15	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: 83 C5.1.2.3

Grid Name [illegible] Grid 4 Sample Period 6 Trap Night 5

Date, time traps set 16 Dec 2 / 0930 Date, time traps checked 17 Dec 25 0930

Last toe clip # used on previous day _____ Field Analyst(s) [illegible]

Project 83 KR0.5P QA Check AB 12/19 4 of 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-12	PEMA	[illegible]	M	A	13	T	———

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: 83C.1.2.1

Sheet ___ of ___ SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name _____ Grid _____ Sample Period _____ Trap Night _____

Date, time traps set _____ Date, time traps checked _____

Last toe clip # used on previous day _____ Field Analyst(s) _____

Project _____ QA Check JB 12/19 1 mi 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 File No: 53 2.5.1.2.1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 5 Sample Period 6 Trap Night 2

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day _____ Field Analyst(s) [illegible]

Project [illegible] QA Check JL 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]						
	1						

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name Wet Brush (Burn) Grid 5 Sample Period 5 Trap Night 3

D[illegible], time traps set 17 Dec 15 0900 Date, time traps checked 18 Dec 15 0900

Last toe clip # used on previous day 2030 Field Analyst(s) [illegible]

Project 83 RBSP QA Check JB 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]	[illegible]	[illegible]				

File No: 8305.12.12

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-J / Sagebrush Grid 6 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (0900) Date, time traps checked 13 Dec 1975 (0900)

Last toe clip # used on previous day 1003 Field Analyst(s) Reyes / Harding

Project 83 RBOSP QA Check JB 12/19 Tom 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
A-13	PEMA	1000	F	A	14	I	marginal L-H foot
C-10	PEMA	1004N	M	J	13	I	—
C-6	PEMA	1005N	M	A	17	I	—

*Key taxonomic characters, physical condition of animal, etc.

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File No: [illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-J/Sagebrush Grid 6 Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (0930) Date, time traps checked 14 Dec 1975 (1000)

Last toe clip # used on previous day 1005 Field Analyst(s) Reuss / Harding

Project 83 RBOSP QA Check [illegible] 12/14 burn 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-13	PEMA	0210	F	A	14	I	—
C-10	LACU	20 CIN	F	A	14	I	—

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: 83 C. 3.1.2.

Grid Name P-3 Sagebrush Grid 6 Sample Period 6 Trap Night 3

Date, time traps set 14 Dec 1995 (1000) Date, time traps checked 15 Dec 1995 (0915)

Last toe clip # used on previous day 2001 Field Analyst(s) Reego Harding

Project 83 REOSP QA Check DB 12/14 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURE						

*Key taxonomic characters, physical condition of animal, etc.

REOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-3 Sagebrush Grid 6 Sample Period 6 Trap Night 4

Date, time traps set 15 Dec 1975 (1715) Date, time traps checked 16 Dec 1975 (0750)

Last toe clip # used on previous day 2001 Field Analyst(s) Penn Glandon

Project 83 PERP QA Check JB 12/19 tum 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-13	PEMA	2002N	M	A	13	—	—

*Key taxonomic characters, physical condition of animal, etc.

NSOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name [illegible] Grid 6 Sample Period 6 Trap Night [illegible]

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day 2002 Field Analyst(s) [illegible]

Project [illegible] QA Check AB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]	[illegible]		TRAP	[illegible]	[illegible]	

*Key taxonomic characters, physical condition of animal, etc.

Sheet 1 of 2 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name UPLAND Meadow Grid 7 Sample Period 6 Trap Night 1

Date, time traps set 12/12/75 1500 Date, time traps checked 12/13/75 1530

Last toe clip # used on previous day 0025 Field Analyst(s) McGregor

Project 83 QA Check JS 12/19 Land 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
A1	PEMA	[illegible]	M	A	U	D	
A2	PEMA	0014	M	A	15	I	
A-4	PEMA	0201	M	A	[illegible]	I	
A-7	PEMA	0015	F	A	14	I	
A-8	[illegible]	0025N	F	A	14	I	
A-10	[illegible]	[illegible]N	M	A	14	I	
A-13	[illegible]	0025N	M	A	19	I	

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 2 of 2 File No: 330.3.7.2.73

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Upland Mosaic Grid 7 Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 75 1500 Date, time traps checked 13 Dec 1530

Last toe clip # used on previous day 0303 Field Analyst(s) BAKER

Project 83 RBISP QA Check JB 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
C-12	[illegible]	[illegible]	M	A	16	T	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C-6	PEMA	0205	M	A	18	I	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B-11	[illegible]	[illegible]	M	A	17	I	[illegible]
C-2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C-1	PEMA	[illegible]	F	A	[illegible]	I	[illegible]

*Key taxonomic characters, physical condition of animal, etc.

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File No: 83.5.1.2.13

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Upland (rocks) Sample Period 7 Sample Period 6 Trap Night 2

Date, time traps set 12/13 1600 Date, time traps checked 12/14/75 1530

Last toe clip # used on previous day _____ Field Analyst(s) McGregor

Project [illegible] QA Check JB 12/16 trap 4-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
6	PEMA	[illegible]	4	A	[illegible]	[illegible]	Scale feed up

*Key taxonomic characters, physical condition of animal, etc.

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File No: 83.2.5.1.2.1

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Grassland - Sa. s Grid A Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (1400) Date, time traps checked 13 Dec 1975 (1400)

Last toe clip # used on previous day 1111 Field Analyst(s) Reyes / Hardin

Project BR, RBOSP QA Check DB 12/19 - Comm 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-6	PEMA	0321	M	A	19	A	NOTE: Trap #
I-9	MILO *	0452N	M	A	20	I	Trap # - Change to 1402*
L-6	PEMA *	0453N	M	A	17	I	Trap # " " 1403*
I-6	MIMO	1450N	F	J	14	I	—

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Grassland/Sage Grid A Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (1500) Date, time traps checked 14 Dec 1975 (1500)

Last toe clip # used on previous day 1454 Field Analyst(s) Page / Hardin

Project 83 RBOSP QA Check JB 12/19 - trap 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Grassland Loop Grid A Sample Period 6 Trap Night 3

Date, time traps set 14 Dec 1975 (1430) Date, time traps checked 15 Dec 1975 (1330)

Last toe clip # used on previous day 1454 Field Analyst(s) Reese / Harding

Project 1975 RBOSP QA Check JB 12/15 Cmnl 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 1 Sample Period 6 Trap Night 1

Date, time traps set 15 Dec 1975 [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day 1154 Field Analyst(s) [illegible]

Project [illegible] QA Check DB 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid A Sample Period 6 Trap Night 5

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day 1454 Field Analyst(s) [illegible]

Project [illegible] QA Check JG 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURE				TRAP		

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-J (South) Grid B Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (1300) Date, time traps checked 13 Dec 1975 (1300)

Last toe clip # used on previous day 1115 Field Analyst(s) Reyes / Harding

Project 83 RBOSP QA Check JB 12/19 trans 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
H-9	PEMA	1121N	F	J	13	I	—
G-7	PEMA	1122N	M	A	17	I	—
H-13	PEMA	1123N	M	A	19	D	—
F-13	PEMA	4002	M	A	18	D	—

*Key taxonomic characters, physical condition of animal, etc.

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SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-J Scrub Grid B Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1975 (1230) Date, time traps checked 14 Dec 1975 (1230)

Last toe clip # used on previous day 1123 Field Analyst(s) Reyes / Harding

Project BR RBOSP QA Check dlb 12/19 trim 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-2	PEMA	1123N	M	A	18	I	dup # tissue - acc. 2 1172
H-13	PEMA	1124N	F	A	16	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-5 (South) Grid B Sample Period 1 Trap Night 3

Date, time traps set 14 Dec 1975 (1230) Date, time traps checked 15 Dec 1975 1200

Last toe clip # used on previous day 1174 Field Analyst(s) Baker | McGregor

Project 83RBOSP QA Check JS 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	Ph [illegible]						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 File No: 330-3-13-12

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P-J (South) Grid B Sample Period 6 Trap Night 4

Date, time, traps set 12/15/75 (1200) Date, time traps checked 12/16/75 (1100)

Last toe clip # used on previous day 0414 Field Analyst(s) McGregor

Project 83 RBOSP QA Check JB 12/19 Lab 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-13	PEMA	4305	M	A	21	I	
H-9	NEOT	0414N	F	A	224	I	

*Key taxonomic characters, physical condition of animal, etc.

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File No: 83.3.1.2.18

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name RJ (South) Grid B Sample Period 6 Trap Night 5

Date, time traps set 16 Dec 25 1130 Date, time traps checked 17 Dec 25 1130

Last toe clip # used on previous day _____ Field Analyst(s) Mehrgan / Kelso

Project 53 HBOSP QA Check JB 12/19 Lum 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-2	Deer	1125	F	A	14	D	—

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 — SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET — File No: [illegible]

Grid Name T-J (North) Grid C Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 75 1600 Date, time traps checked 13 Dec 7 1700

Last toe clip # used on previous day 0242 Field Analyst(s) Parker

Project SS Recap QA Check JB 12/19 Mm 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-6	PEMA	0243	M	A	13	I	
H-1	EUCI	0244	M	J	52	I	
G-6	PEMA	4000	M	A	13	I	

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name P/J (NORTH) Grid C Sample Period 6 Trap Night 2

Date, time traps set 12/13/75 1100 Date, time traps checked 12/14/75 1630

Last toe clip # used on previous day 0342 Field Analyst(s) McGregor

Project RBOSP QA Check JB 12/14 Sum 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
G-1	PEMA	0359	M	A	17	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name [illegible] Grid C Sample Period 6 Trap Night 3

Date, time traps set 14Dec 75 1635 Date, time traps checked 15Dec 75 1510

Last toe clip # used on previous day 6302 Field Analyst(s) [illegible]

Project 53 KRSY QA Check JB 12/19 Num 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	No Captures						

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name P-3 (NORTH) Grid C Sample Period 6 Trap Night 4

Date, time traps set 12/15/75 (1530) Date, time traps checked 12/16/75 (1130)

Last toe clip # used on previous day 0343 Field Analyst(s) McGregor [illegible]

Project 83 RBOSP QA Check JBF 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name [illegible] Grid C Sample Period 6 Trap Night 5

Date, time traps set 16 Dec 05 1200 Date, time traps checked [illegible]

Last toe clip # used on previous day _____ Field Analyst(s) [illegible]

Project 83 / RBOSP QA Check [illegible] 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Sagebrush (shrub) Grid D Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 1975 (1600) Date, time traps checked 13 Dec 1975 (1000)

Last toe clip # used on previous day 0132 Field Analyst(s) Reyes / Harding

Project 23 RBOSP QA Check JB 12/19 Lmw 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
H-2	PEMA	4040	F	A	17	I	—

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No: [illegible]

Grid Name Goodbrook (North) Grid D Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 1915 (1015) Date, time traps checked 14 Dec 1915 (1017)

Last toe clip # used on previous day 0132 Field Analyst(s) Reeves | Hawkins

Project 82 PBOSP QA Check JB 12/19 time 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

PBOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid D Sample Period 6 Trap Night 3

Date, time traps set 14 Dec 1975 1015 Date, time traps checked 15 Dec 1975 0930

Last toe clip # used on previous day 0132 Field Analyst(s) Harding/Page

Project RBOSP QA Check JB 12/19 Lines 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Sage (North) Grid D Sample Period 6 Trap Night 4

Date, time traps set 15 Dec 1995 (0930). Date, time traps checked 16 Dec 1995 (0930).

Last toe clip # used on previous day 1332 Field Analyst(s) Ray Harding

Project PREBLE QA Check JB 12/19 6-Am1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	NO CAPTURES						

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid D Sample Period 1 Trap Night 5

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day [illegible] Field Analyst(s) [illegible]

Project [illegible] QA Check JB 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Wind Gap (South) Grid E Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 75 1000 Date, time traps checked 13 Dec 75 1110

Last toe clip # used on previous day C454 Field Analyst(s) McGregor/Bauer

Project 83 - RBOSP QA Check MS 12/19 - 4mw 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-1	PEMA	0042	M	A	14	I	
H-1	PEMA	0455N	M	A	12	I	
F-2	PEMA	1111N	M	A	13	I	
F-3	PEMA	1112N	M	A	13	I	—
F-4	PEMA	0443	M	A	14	I	
F-6	PEMA	1113N	M	A	14	I	
H-12	PEMA	1114N	F	A	13	I	
F-13	PEMA	0124	F	A	15	I	
H-13	PEMA	0312	M	A	14	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Mid Cash (South) Grid E Sample Period 6 Trap Night 2

Date, time traps set 13 Dec 75 0930 Date, time traps checked 14 Dec 75 1000

Last toe clip # used on previous day 1114 Field Analyst(s) BOKER

Project 23 RBOSD QA Check JB 12/17 Num 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-13	PEMA	0355M	M	A	16	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 1 of 2 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET File No:

Grid Name Douglas Fir Grid F Sample Period 6 Trap Night 1

Date, time traps set 12/Dec/75 11:00 Date, time traps checked 13/Dec/75 1130

Last toe clip # used on previous day 0320 Field Analyst(s) McGregor

Project 83 RBOSP QA Check JB 12/19 -Lynn 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-12	CLGA	0330N	M	A	12	I	
F-11	CLGA	0401	F	A	13	I	

*Key taxonomic characters, physical condition of animal, etc.

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Sheet 2 of 2

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Douglas Fir Grid F Sample Period 6 Trap Night 1

Date, time traps set 12 Dec 75 1100 Date, time traps checked 13 Dec 75 1130

Last toe clip # used on previous day 2200 Field Analyst(s) BAKER

Project 83 RBOSP QA Check JB 12/19 Trans 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
F-1	PEMA	2200	F	A	16	I	—
F-1	PEMA	2300M	F	J	11		—

*Key taxonomic characters, physical condition of animal, etc.

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File No: [illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid [illegible] Sample Period 1 Trap Night 2

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day _____ Field Analyst(s) [illegible]

Project RBOSP QA Check SB 12/14 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
T-3	CLGI	2/100 N	F	A	12	T	—
T-2	[illegible]	3/102 N	M	A	13	T	—
T-1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
T-1	[illegible]	[illegible] N	M	A	12	T	—
T-12	CLGI	[illegible]	M	A	11	D	—

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

[illegible] consultants, Inc.

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Aspen Grid G Sample Period 6 Trap Night 1

Date, time traps set 12/Dec/75 1330 Date, time traps checked 13/Dec/75 15:33

Last toe clip # used on previous day 0044 Field Analyst(s) McGregor

Project F3 RBOSP QA Check JB 12/19 trap 1-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
H-4	CLGA	0045N	M	A	13	T	
H-2	CLGA	0051N	F	A	12	T	
F-1	CLGA	0052N	M	U	11	D	

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

Sheet 2 of 2 File No: [illegible]

SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid G Sample Period 6 Trap Night 5 1

Date, time traps set 12 Dec 87 1330 Date, time traps checked 13 Dec 1330

Last toe clip # used on previous day 0430 Field Analyst(s) BAKER

Project 83 RBOSP QA Check JB 12/14 Audit-5

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
G-5	[illegible]	[illegible]	M	A	11	T	
G-12	[illegible]	[illegible]	F	A	[illegible]	T	
G-10	[illegible]	1001 N	M	A	13	T	

*Key taxonomic characters, physical condition of animal, etc.

070/060175

RBOSP PROGRESS REPORT

File No: [illegible]

Sheet 1 of 1 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name Asper Grid C Sample Period C Trap Night 2

Date, time traps set 12/13/75 1[illegible] Date, time traps checked 12/14/75 1[illegible]

Last toe clip # used on previous day 0052 Field Analyst(s) McGregor

Project T2 RBOSP QA Check JB 12/14 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
A-4	CLGA	0054	F	A	13	D	
C-3	MILO	0042	M	A	21	I	
A-2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	I	

*Key taxonomic characters, physical condition of animal, etc.

RBOSP PROGRESS REPORT

File No: [illegible]

Sheet [illegible] of 2 SMALL MAMMAL LIVE TRAPPING FIELD DATA SHEET

Grid Name [illegible] Grid 6 Sample Period 6 Trap Night 2

Date, time traps set [illegible] Date, time traps checked [illegible]

Last toe clip # used on previous day 1021 Field Analyst(s) [illegible]

Project [illegible] REOSP QA Check JB 12/19 [illegible]

Capt. Loc.	Species	Toe Clip No.	Sex	Age Class	Animal Weight (gm)	Reprod. Status	Additional* Notes
[illegible]	MILO	[illegible]	M	A	[illegible]	I	—
[illegible]	CICP	[illegible]	M	A	[illegible]	I	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

*Key taxonomic characters, physical condition of animal, etc.

070/060175

070/060175

HBOSP PROGRESS REPORT

File No: [illegible]

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 1 Location Rolland Land (Meadow) Field Analysts Rapp / Hanlin

Sampling Period 6 Project Number [illegible] QA Check JB 12/19 Lines 1-5

Date	Species	Sex	Age	Comments*
Dec 12	pits were full of			
	ice + water down			
	bed of cattle in			
	field made accessible			
	to pitfalls impossible			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

RBOSP PROGRESS REPORT

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 2 Location Sagebrush (Hill) Field Analysts [illegible]

Sampling Period 6a Project Number [illegible] QA Check B 12/19 Lines 1-5

Date	Species	Sex	Age	Comments*
[illegible]	NO CAPTURES			
[illegible]	NO CAPTURES			
[illegible]	NO CAPTURES			
[illegible]	[illegible]			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

REOSP PROGRESS REPORT
ecology consultants, inc.

File No: _____

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 3 Location Rabbitbrush Field Analysts Parker / Hargrave

Sampling Period 6 Project Number 2-2-1-058 QA Check JB 12/19 Trap 1-5

Date	Species	Sex	Age	Comments*
14 Dec '75	No Captures			
15 Dec	Sorex vagrans	U	U	Sp. in common to Jack Pine
"	Sorex vagrans	M	M	Identification
16 Dec	No Captures			
17 Dec	No Captures			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

RBOSP PROGRESS REPORT

File No: [illegible]

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 4 Location Rd/Mid Creek Field Analysts [illegible]

Sampling Period 6 Project Number [illegible] QA Check JS 12/19 4am 1-5

Date	Species	Sex	Age	Comments*
1 Dec '25	NO CAPTURES			
5 Dec	" "			
11 Dec	" "			
17 Dec	" "			
	[illegible]			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

ROOSP PROGRESS [illegible]
[illegible] CONSULTANTS, INC.

File No: _____

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 6 Location P-J/Sagebrush Field Analysts HARDING

Sampling Period 6 Project Number 83 QA Check JB 12/19 Anne 1-5

Date	Species	Sex	Age	Comments*
13 Dec 1975	NO CAPTURES			
"	"			
"	"			
"	"			

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 2 Location Upland Woodland Field Analysts [illegible]

Sampling Period 4 Project Number 42 QA Check JB 12/19 Lines 1-5

Date	Species	Sex	Age	Comments*
[illegible]	[illegible]	[illegible]		

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 8 Location Riparian Field Analysts [illegible]

Sampling Period 6 Project Number 53 QA Check JB 12/19 June 1-5

Date	Species	Sex	Age	Comments*
	Pitfall on control-			
	hill dune slope			
	sand layer			
	ice in cans			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

RBOSP PROGRESS R[illegible]

File No: _____

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number A Location Grassland-Sec Field Analysts [illegible]

Sampling Period 6 Project Number [illegible] P QA Check JES 12/14 Anal 1-5

Date	Species	Sex	Age	Comments*
Dec 14	NO CAPTURES			
Dec 15	NO CAPTURES			
Dec 16	NO CAPTURES			
Dec 17	NO CAPTURES			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

NBOSP PROGRESS REPORT

File No: [illegible]

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number B Location D-J (South) Field Analysts Baker / McC[illegible]

Sampling Period [illegible] Project Number [illegible] QA Check JB 12/19 [illegible]

Date	Species	Sex	Age	Comments*
[illegible]	[illegible]			
[illegible]	" "			
[illegible]	" "			
[illegible]	" "			

Pitfall Number C Location P-J (NIMZ) Field Analysts [illegible]

Sampling Period 6 Project Number [illegible] QA Check LS 12/17 Lines 1-5

Date	Species	Sex	Age	Comments*
11 DEC	[illegible]			
11 DEC	[illegible]			
11 DEC	[illegible]			
11 DEC	[illegible]			

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number D Location Sagebrush (North) Field Analysts [illegible]

Sampling Period 6 Project Number 53 QA Check JB 12/14 Lines 1-5

Date	Species	Sex	Age	Comments*
11 Dec	Ammospermophilus leucurus			
15 Dec	" "			
16 Dec	" "			
17 Dec	" "			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

RECEIVED PROGRAMS

057/060175

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File No: _____

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number E Location Mixed Forest Field Analysts [illegible]

Sampling Period 6 Project Number [illegible] QA Check JB 11/14 Lab 1-5

Date	Species	Sex	Age	Comments*
	Pit was inundated			
	because of [illegible]			
	and [illegible]			

Pitfall Number F Location Douglas Fir Field Analysts [illegible]

Sampling Period 6 Project Number [illegible] QA Check JS 12/19 [illegible]

Date	Species	Sex	Age	Comments*
	No [illegible]			
	[illegible]			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

RBOSP PROGRESS REPORT

SMALL MAMMAL PITFALL FIELD DATA SHEET

Pitfall Number 6 Location Aspen Field Analysts [illegible]

Sampling Period 6 Project Number 23 QA Check JB 12/19 [illegible]

Date	Species	Sex	Age	Comments*
	Pitfall 6 not opened because of snow			

*Reproductive condition, diagnostic characters, future use of specimens, etc.

[illegible] REPORT

75

057/060175

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83-C-5 2.1.

STOMACH ANALYSIS DATA SHEET

Project 83 Date Dec '75 Investigator Reyes

Location T2S R99W sec 17 SE 1/4 - W 1/2 Habitat Sagebrush

Capture Technique Pit trap

Comments see below from 2-17-75

Species Peromyscus maniculatus

	A	B	C	D	E		A	B	C	D	E		A	B	C	D	E		A	B	C	D	E		A	B	C	D	E
1		S	S			11	S	S	S			21	S	S	S			31	S	S	S			41	S	S	S		
2		S	S			12		S				22	S	S	S			32	S	S	S			42	S	S	S		
3		S	S			13		S				23	S	S	S			33	S	S	S			43	S	S	S		
4		S	S			14		S	S			24	S	S	S			34	S	S	S			44	S	S	S		
5	S	S	S			15		S	S			25	S	S	S			35	S	S	S			45	S	S	S		
6		S	S			16		S	S			26	S	S	S			36	S	S	S			46	S	S	S		
7		S	S			17	S	S	S			27	S	S	S			37	S	S	S			47	S	S	S		
8		S	S			18	S	S	S			28	S	S	S			38	S	S	S			48	S	S	S		
9		S	S			19	S	S	S			29	S	S	S			39	S	S	S			49	S	S	S		
10	S	S	S			20	S	S	S			30	S	S	S			40	S	S	S			50	S	S	S		

	Measurements					
	Sex	TL	T	HF	E	grams
A	♂	154	44	19	14	17
B	♂	152	43	19	15	20
C	♀	148	47	18	15	18
D	♂	150	46	18	16	17
E	♂	141	40	18	15	19

most of the stomach contents in 3 cases, ABE, were filled with peanut butter, which washed away; the remaining materials were leaf fragments, analysis is based on this fact - ∴ this data is highly not comparable to data analyses done on "full" stomachs from fall + summer.

empty except for peanut butter

RBOSP PROGRESS REPORT

ecology consultants, Inc.

83C 5.2.2.1

STOMACH ANALYSIS DATA SHEET

Project 83 Date Dec 75 Investigator Rice

Location (D) T15R7W S3 NE¼SW¼ Habitat greasewood - Saltbush

Capture Technique trap

Comments specimen was visibly bulging very hard to read from 2-17-7. Veg condition

Species Perognathus parvus

	A	B	C	D	E		A	B	C	D	E		A	B	C	D	E		A	B	C	D	E		A	B	C	D	E
1						11						21						31						41						
2						12						22						32						42						
3						13						23						33						43						
4						14						24						34						44						
5						15						25						35						45						
6						16						26						36						46						
7						17						27						37						47						
8						18						28						38						48						
9						19						29						39						49						
10						20						30						40						50						

Measurements						
	Sex	TL	T	HF	E	grams
A	♂	160	66	19	15	24
B	♀	130	40	16	13	11
C	♀	128	42	16	12	16
D	♂	165	61	18	15	21
	♂	134	61	17	13	15

♂♂ testes

stomach almost empty

* seeds appear to be mostly pungent

— empty - only fur particles

RBOSP PROGRESS REPORT

ecology consultants inc.

File No: [illegible]

SNAP TRAP LINE RECORD SHEET

Collector: [illegible] Date: Dec. 1975 Project: [illegible]

Location: T 15 R 99W S 34 1/4 1/4 S[illegible] Vegetation Type: [illegible]

Trap Type: snap trap No. of Traps: [illegible] No./Station: 2

Approximate Spacing of Stations: 10M Bait: [illegible]

QA Check: [illegible] Date: 12-75

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
PEMA		X			160-65-19-15 [illegible]
PEMA			X		170-40-16-12 [illegible]
NO CAPTURES					
PEMA				X	165-60-17-15 [illegible]
PEMA	X				134-57-17-13 [illegible]
PEMA			X		155-56-16-17 [illegible]

Comments: (empty or missing traps, unusual occurrences, etc.)

RBOSP PROGRESS REPORT

ecology consultants, inc.

File No: 83052.2

SNAP TRAP LINE RECORD SHEET

Collector: Reuss Date: Dec 1975 Project: 83

Location: T 26 R [illegible] S 17 1/4 1/4 S [illegible] Vegetation Type: Sagebrush

Trap Type: [illegible] No. of Traps: 40 No./Station: 2

Approximate Spacing of Stations: 10M Bait: [illegible]

QA Check: [illegible] Date: 1975

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
Day 1 PEMA		X			17 - [illegible] - 19-15 : [illegible]
PEMA				X	11-24-72 - 19-15 : [illegible]
Day 2 PEMA		X			151-69 - 19-14 : 17 [illegible]
PEMA		X			140 - 68-18-15 : [illegible]
PEMA		X			[illegible] - 60 - 18-15 : 17 [illegible]
Day 3 NO CAPTURES		-			
Day 4 NO CAPTURES		-			

Comments: (empty or missing traps, unusual occurrences, etc.)

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RBOSP PROGRESS REPORT

geology consultants, Inc.

File No: 8365.2.2

SNAP TRAP LINE RECORD SHEET

Collector: Reiges Date: Dec 1975 Project: 03

Location: T 25 R 09W S 14 1/4 1/4 S [illegible] Vegetation Type: Pinus juniper (north)

Trap Type: snap No. of Traps: 90 No./Station: 2

Approximate Spacing of Stations: 10 M Bait: peanut butter

QA Check: [illegible] Date: 12-75

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
Day 1 EUQU			X		not necessary for analysis [illegible]
Day 2 NO CAPTURES					
Day 3 NO CAPTURES					
Day 4 NO CAPTURES					

Comments: (empty or missing traps, unusual occurrences, etc.)

RBOSP PROGRESS REPORT

ecology consultants, inc.

File No: 85-25-3.2

SNAP TRAP LINE RECORD SHEET

Collector: Rivers Date: Dec 1975 Project: 03

Location: T 26 R [illegible] S 21 1/4 1/4 S [illegible] Vegetation Type: Pinon-juniper (scrub)

Trap Type: snap No. of Traps: 10 No./Station: 2

Approximate Spacing of Stations: 10M Bait: peanut butter

QA Check: [illegible] Date: 12-75

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
Day 1 NO CAPTURES					
Day 2 NO CAPTURES					
Day 3 NO CAPTURES					
Day 4 NO CAPTURES					

Comments: (empty or missing traps, unusual occurrences, etc.)

File No: 83 C5.2.2

SNAP TRAP LINE RECORD SHEET

Collector: Penk Date: Dec 1975 Project: 83

Location: T 7S R 1 W S 3 1/4 1/4 S Vegetation Type: Mixed Brush

Trap Type: trap No. of Traps: 40 No./Station: 2

Approximate Spacing of Stations: 10M Bait: peanut butter

QA Check: Lewis Date: 12-75

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
NO CAPTURES					

Comments: (empty or missing traps, unusual occurrences, etc.)

Lines could not be set because of snow

RBOSP PROGRESS REPORT

File No: 83.5.2.2

SNAP TRAP LINE RECORD SHEET

Collector: Reyes Date: Dec 1975 Project: 83

Location: T____ R____ S____ 1/4 1/4 S____ Vegetation Type: ASPEN

Trap Type: snap No. of Traps: 40 No./Station: 2

Approximate Spacing of Stations: 10M. Bait: peanut butter

QA Check: Lum Date: 12-75

Species	Number of Animals ♂ Juv.	♂ Ad.	♀ Juv.	♀ Ad.	Specimen Disposition
NO CAPTURES					

Comments: (empty or missing traps, unusual occurrences, etc.)

lines could not be set because of snow

83

RBOSP PROGRESS REPORT

MAMMAL NIGHT ROAD CENSUS DATA AND SUMMARY SHEET

Project 83 Transect # (on S.O.W. map) Date 26 February, 1976 Sunset Time ≈ 18:30

Time Begun ~~20:45~~ 19:45 Temp. 0°C Time Completed 27 Feb 0.07 Temp. ~~0°C~~ 2°C Cloud Cover 0

Starting Point 84 mesa, on map Finish Point cattle road Length of Transect 21 miles

Observable Distance Estimates up to 25 meters.

Mile 1 14 ; 2 15 ; 3 ~~14~~ 11 ; 4 17 ; 5 11 ; 6 13 ; 7 12 ; 8 8 ; 9 8 ; 10 12 ;

11 13 ; 12 14 ; 13 15 ; 14 13 ; 15 11 ; 16 11 ; 17 10 ; 18 12 ; 19 8 ; 20 8 ;

21 10 ; 22 ____ ; 23 ____ ; 24 ____ ; 25 ____ ; 26 ____ ; 27 ____ ; 28 ____ ; 29 ____ ; 30 ____ .

Odometer Reading	Species Observed	Habitat	Odometer Reading	Species Observed	Habitat
5.9	— start				
55.7	Mule deer (8)*	high sage (84 Mesa)			
59.1	Mule deer (3)*	Pinyon-juniper (south)			
60.0	Mule deer (6)*	Pinyon-Juniper (south)			
60.8	Mule deer (9)*	Pinyon Juniper (south)			
61.0	Sylvilagus sp.	Rabbitbrush			
65.3	Mule deer (3)*	upland sage, mixed brush			
65.6	Mule deer (2)*	mixed brush			
6.9	— end				
80.0	— start				
83.7	bats ? (3) *	sage/p-j (on road)			
84.3	bat (2) *	sage/p-j (on road)			
89.0	— end				

* Censused by other means

1. $\bar{x}$ est. dist. 11.7 m. x transect length 33789 m. = 395331 sq. m. of coverage.

2. $\frac{\text{sq. m. coverage}}{\text{sq. m./hectare}} = \frac{395331}{10{,}000} =$ 39.53 hectares; $N = \frac{\text{number sited}}{\text{total hectares}} =$ _____ /hectare.

Species	No. Sighted	Hectares Covered	Pop. Est./Hectare
Sylvilagus sp.	1	39.53	0.03

ROOS PROCESS Figure 3

MAMMAL NIGHT ROAD CENSUS DATA AND SUMMARY SHEET

Project 83 Transect # (on map) Date 28 February, 1976 Sunset Time ≈ 18:30

Time Begun 20:24 Temp. 6°C Time Completed 00:38 Temp. 5°C Cloud Cover 10 %

Starting Point 89 mesa (on map) Finish Point cath. road (map) Length of Transect 21 miles

Observable Distance Estimates up to 25 meters.

Mile 1 14 ; 2 15 ; 3 11 ; 4 17 ; 5 11 ; 6 13 ; 7 12 ; 8 8 ; 9 8 ; 10 12 ;

11 13 ; 12 14 ; 13 15 ; 14 13 ; 15 11 ; 16 11 ; 17 10 ; 18 12 ; 19 8 ; 20 8 ;

21 10 ; 22 ; 23 ; 24 ; 25 ; 26 ; 27 ; 28 ; 29 ; 30 .

Odometer Reading	Species Observed	Habitat	Odometer Reading	Species Observed	Habitat
73.6	— start				
79.2	mule deer (2) *	pinyon-juniper (south-slope)			
79.3	mule deer (4) *	pinyon-juniper (south-slope)			
79.4	mule deer (2) *	pinyon-juniper (south-slope)			
84.2	rat? kangaroo rat? *	upland sage			
85.4	bats (2) *	mixed brush			
85.5	mule deer (5) *	mixed brush			
85.6	— end				
99.8	— start				
00.4	Lepus townsendii	mixed brush			
01.9	P. maniculatus *	road			
05.9	bat (1) *	bottomland sage			
08.8	— end				

* censused by other means

1. $\bar{x}$ est. dist. 11.7 m. x transect length 33789 m. = 395331 sq. m. of coverage.

2. $\frac{\text{sq. m. coverage}}{\text{sq. m./hectare}} = \frac{395331}{10{,}000} =$ 39.53 hectares; $N = \frac{\text{number sited}}{\text{total hectares}} =$ _____/hectare.

Species	No. Sighted	Hectares Covered	Pop. Est./Hectare
Lepus townsendi	1	39.53	0.03

RBOSP PROGRESS REPORT

Jan 3-5-76

2.3.3.4 Small Mammal Raw Data

2.3.4 Large Mammals

2.3.4.1 Introduction

No changes have been implemented since the Second Annual Report. See Section 7.2.B.1 in the Second Annual Report for the objectives of the large mammal program.

2.3.4.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.B.2 in the Second Annual Report for specific methods used in the large mammal program.

2.3.4.3 Results

Large mammal aerial surveys were conducted on December 4 and 18, 1975; January 5 and 29, 1976; and February 23, 1976. A census flight scheduled for Febraury 9 was postponed and reattempted on February 14. That flight had to be cancelled partway through due to hazardous flying conditions and was repeated on Febraury 23, 1976.

The number of mule deer, elk, and feral horses observed during each survey is presented in Table 2.3-17.

Mule deer observed during the December surveys were generally in herds scattered throughout the study area. During early January, the deer were concentrated in herds located mostly to the east and southwest of Tract C-a. By February, however, the pattern of mule deer observations indicated that the majority of the deer were in herds to the east of Tract C-a. Elk were observed during only one survey and were located northwest of Tract C-a. Feral horses were observed on 84 Mesa during all surveys, but the majority of the horses observed were located on areas west and south of Tract C-a.

Table 2.3-17

NUMBER OF MULE DEER, ELK, AND FERAL HORSES
OBSERVED DURING FIVE AERIAL SURVEYS CONDUCTED FOR RBOSP

Date	Mule Deer	Elk	Feral Horses
December 4, 1975	88	0	69
December 18, 1975	367	0	59
January 5, 1976	174	0	65
January 29, 1976	184	0	47
February 23, 1976	287	11	44
TOTALS	1,100	11	284

2.3.4.4 LARGE MAMMAL RAW DATA

2.3.4 Large Mammals

F') No. 83 C 6.1.3.2

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LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/04 Date Flown 4 Dec 1975 Species Mule deer Survey Area RBOSP

Observers: R.F. CL Kling L.R. PL Kennedy Pilot/Aircraft Ken Paur / Cessna 206

Start 0741 Finish 1012 Avg. Indicated Air Speed 80-85 Est. Altitude 150-200

Counting Conditions: Ground Cover Fair Light Excellent Air Excellent

Weather: Temp. 38°/33° Wind E2/50 Cloud Cover 0/0 Analyst CLC, PLK QA Check Form 1-19-

Observations M	F	JUV	U	Location (transect)		Notes and Comments
	2			1	South of Yellow Creek	P-J
	2				Wagon Road Ridge north slope	P-J
	1	1		3	S of Yellow Creek	P-J
1				4	Wagon Road Ridge	P-J
	1	2			breaks of 84 mesa	
1				5	breaks of Duck Creek	P-J
	1				top of Wagon Road Ridge	Sagebrush
			11	7	Van Horn Gully	P-J/sagebrush interface
				9		- few tracks on Wolf Ridge
			4		top of Hunk Ridge	Sagebrush running West
			1	10	same herd as ↑	near road.
				11		very few tracks on Wolf Ridge
				13		Scattered few tracks on 84 mesa N of Trans C-a
						numerous tracks by hunting club
			8	15	Dead Horse Ridge south slope	
			2		Sagebrush Ridge North slope	numerous tracks on Dead Pig Ridge
	~				Airplane Ridge	mixed brush
			3		end of transect	on the ridge.
			4	16	Airplane Ridge	mixed brush, Sage brush
			5		Dead Horse Ridge south slope	
			3	17	Dead Pig Ridge north slope	
				19		numerous tracks at start by the bluffs + Duck Creek
			4		Duck Creek south slope	mixed brush
	4			2	ridge east of Stick Gully	running in sagebrush habitat
1				4	ridge south of Yellow Creek	running in P-J/sagebrush ecotone
3	6	3	45	Page total ✓		

Total Animals Counted: (58) ✓

Animal Distribution: mapped - deer tracks

87

RBOSP PROGRESS REPORT

F) No. 83C16.1.3.21

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 2

Proj/Study 83/09 Date Flown 4 Dec 1975 Species Mule Deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Ave. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check June 1-19-

Observations M	F	JUV	U	Location	Notes and Comments
	3			5 North of Kyan Gulch	p-j woodland
			1	8 north of Stake Springs	
			3	10 ~1½ miles north of Corral Gulch	running in sagebrush type
	4			14 ridge between Rees Gulch and Live Eagle Gulch	p-j woodland
			1	15 south of Little Duck Creek	p-j woodland
	1			15 south of Live Eagle Gulch	
	1			16 north end of transect	
	3			16 north slope of Airplane Ridge	mixed brush
			2	17 Airplane ridge	bedded down next to a mountain shrub
			2	19 south of Big Duck Creek	
0	12	0	9	projected √	

Total Animals Counted: (88) √ 88

Animal Distribution: Migrant - Sentinel

RBOSP PROGRESS REPORT

130/060175

( ) F) No. Y5 C.

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

1 of 4

Proj/Study 83/001 Date Flown 18 Dec 1975 Species Mule Deer Survey Area RBOSP

Observers: R. C.L. Kling L. J.R. Rees Pilot/Aircraft Len Paur / Cessna 206

Start 0840 Finish 1111 Avg. Indicated Air Speed 80-85 mph Est. Altitude 150-200

Counting Conditions: Ground Cover Excellent Light Excellent Air Excellent

Weather: Temp. 15°/25°F Wind 1/0 Cloud Cover 0/0 Analyst CLK QA Check [illegible] 1-20-76

Observations M	F	JUV	U	Location (transect)	Notes and Comments
			1	1 S of Yellow Creek	P-J sagebrush north of flat sagebrush area numerous tracks south of Yellow Creek
	1			North of Ryan Gulch	P-J numerous tracks along pipeline
			3	N of Ryan S of pipeline	P-J.
			4	bottom of Ryan N of road	
			4	Wagon Road Ridge small gulch	
			2	Wagon Road Ridge near Black Sulfur	
			3	end of transect	
			0	2	
			3	3 S of Yellow Creek	P-J breaks area
			2	Wagon Road Ridge	small gulch P-J sagebrush type
			4	Wagon Road Ridge	
			3	top of Wagon Road Ridge	P-J type
			5	4 Wagon Road Ridge Cross fence	P-J/sagebrush
			4	N of Yellow Creek	P-J/breaks
			3	5 84 mesa mid way	P-J type
			2	S of Stake Springs	Sagebrush
			1	Pipeline	P-J
			2	N of Ryan Gulch	P-J
			14	Wagon Road Ridge	P-J Sagebrush
			4	Wagon Road Ridge	1 ofthem bedded Sagebrush
			6	6 Hunk Ridge	P-J type near small gully
			2	S of road in Stake Springs	Bottomland sagebrush
				7	NE Facing slope of Duck creek has numerous tracks few tracks on North slope of Wolf Ridge but tracks more frequent as we approach Stake Springs
			2	Hunk Ridge	North facing slope P-J type
1			71	[illegible]	

Total Animals Counted: (367) ✓ 89

Animal Distribution: East + West of trail not concentrated

RBOSP PROGRESS REPORT

F No. 32 6.1.3.2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 4

Proj/Study 83/04 Date Flown 18 Dec 1975 Species Mule Deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Avg. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst. _____ QA Check [illegible] 1-20-7

Observations M	F	JUV	U	Location (Transect)	Notes and Comments
			2	7 con't Hunk Ridge N of road	
			8	9 N of breaks into Corral Gulch	Sagebrush / P-J
			3	bottom of Stake Springs	Sagebrush at mouth of House Draw
			9	10 bottom of Ryan Gulch	
			1	84 mesa N of corral Gulch	Sagebrush
			13	11 ~1½ miles from Juniper N of Corral Gulch	
			4	Wolf Ridge top	Sagebrush
			3	12 84 mesa near Duck Creek	Sagebrush / P-J
				13	numerous tracks south of pipeline north of Stake
			6	14 South of met tower	South facing slope
				15	Sagebrush Hill north face = old tracks south face = more new tracks.
			~		
			2	Airplane Ridge	South facing Slope
			1	Landing Strip Ridge	North facing Slope
					numerous tracks on south facing slope of ridge south of Landing Strip Ridge.
			18	16 Top of Airplane Ridge	
					South slope of Dead Horse Ridge heavily tracked
			7	Dead Horse Ridge	bedded
			3	N of Big Duck Creek	bedded
				17	East Fork Spring Creek has highest track density of any of the areas we have crossed this morning animals are bedded at this time
					track density North of North fork of Big Duck is greater than that North of the South Fork of Big Du
			16	bottom between Sagebrush Hill and Dead Horse ridge	
			5	top of Sagebrush Hill	mountain brush type
			101	Page total ✓	

Total Animals Counted: 90

Animal Distribution:

RBOSP PROGRESS REPORT

130/060175

F No. 83C 6.1.3.3

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 3 of 4

Proj/Study 83/04 Date Flown 18 Dec 1975 Species Mule Deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Avg. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check [illegible] 1-20-76

Observations M	F	JUV	U	Location	Notes and Comments
				transect	
			5	17 cont North part of Airplane Ridge	bedded in mnt brush
					very few tracks in Diamond Hill area
			8	pipeline	
				18	few tracks on Dead Pig Ridge, most tracks North
			10	end of transect	bedded in mnt brush
				19	numerous tracks in East Fork Spring Creek
					area
			2	East Fork Springcreek	bedded mountain brush
			11	Headwaters of North Fork Big Duck	bedded near bottom in mountain brush
			6	between Spruce and KU Gulch	mixed brush type
	3			1 near junction of Big Duck + Yellow Creek	
			1	1 mile past Yellow Creek	
			1	3 mi past Yellow Creek	
			4	just before Ryan Gulch	
			3	after Ryan Gulch	
			3	2 Wagon Road Ridge	
			2	½ mile Past Wagon Road Ridge	
			4	Hunk Ridge near road	
			4	4 up ridge past Yellow Creek	
			1	5 ½ way along transect	
			7	along ridge before Ryan Gulch	
			3	Wagon Road Ridge near Black Sulfur	
			3	6 Bottom of Ryan Gulch	
			5	after Cordal Gulch	
			3	84 mesa	
			1	7 Duck Creek	
	3		87	proj total ✓	

Total Animals Counted: 91

Animal Distribution:

[illegible] PROGRESS REPORT

F No. R3E 6.1.3.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 4 of 4

Proj/Study 83/04 Date Flown 18 Dec 85 Species Mule Deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Avg. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check [illegible] 1-20-

Observations M	F	JUV	U	Location Transect		Notes and Comments
			9	7 cont	84 mesa	
			18		S of Corral Gulch	
			6	8	before Stake Springs	
			6	9	84 mesa before Corral Gulch	
			3	10	Gulch before Corral Gulch	
			4	11	before Stake Springs	PJ
			2		Stake Springs	
			5	15	past Corral Gulch	
			5	16	Airplane Ridge	
			5		next ridge N of airplane	
			4		Big Duck Creek	
			2		S of Little Duck Creek	
			5	17	at start	
			1		second gully from start	
			11		N of North Fork of Big Duck	
			6		Top of Airplane Ridge	
			3		at end of transect	
			6	18	North Fork of Big Duck	
			101	page total		

Total Animals Counted: 367 ✓ 92

Animal Distribution: East was of Trail not concentrated

RBOSP PROGRESS REPORT

F' No. 82.16.1.3.2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 2

Proj/Study 83/04 Date Flown 5 Jan 1976 Species Mule deer Survey Area RBOSP

Observers: R CL Kling L D Kuefa Pilot/Aircraft Len Paur/Cessna 206

Start 0802 Finish 1039 Avg. Indicated Air Speed 80-85 mph Est. Altitude 150-200'

Counting Conditions: Ground Cover Excellent Light Fair Air Poor

Weather: Temp. 25°/22° Wind SE 3/1 Cloud Cover 3/3 Analyst CK QA Check [illegible] 1-27-76

Observations M	F	JUV	U	Location	Notes and Comments
				Transect II	
1				1 breaks S of Yellow Creek	P-J / sagebrush
	1			N of Flat area Hunk Ridge	P-J / sagebrush
			4	N of Flat area Hunk Ridge	P-J and sagebrush interface.
			4	N of Ryan Gulch	P-J
			6	N of Ryan Gulch	P-J
			3	2 N of Ryan Gulch	P-J
			6	S of Flat area Hunk Ridge	P-J
			5	3 breaks into Duck Creek	P-J
			3	4 S of yellow Creek	P-J
			21	5 Hunk Ridge	P-J north facing slope
			4	6 Van Horn Gully	sagebrush
			4	7 Van Horn Gully	sagebrush
			8	7 Snake Springs	sagebrush type
			6	10 Duck Creek	bottom
			1	14 Duck Creek	Sagebrush
			4	15 Airplane Ridge	N-facing slope mixed brush type
			9	16 Dead Pig Ridge	S facing slope
			3	17 Calamity Ridge	mountain brush
			4	East Fork Spring Creek	mixed brush
			9	Slope above Spruce Gulch	south facing slope Spruce Gulch
				18	no tracks on south end of transect
				19	no tracks on top
				Transect #	
			1	1 east beyond So. Van Horn Gulch (Gully)	Sagebrush / P-J
			2	south end of So. Van Horn Gulch (Gully)	P-J / Sagebrush
			2	south ridge Ryan Gulch	P-J
			2	northside Wagon Road Ridge	P-J
1	1		111	page total ✓	

Total Animals Counted: 174 ✓

93

Animal Distribution: Scattered bunches east and southwest of Trail [illegible]

RBOSP PROGRESS REPORT

( ) No. R3C6.1.3.5

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 2

Proj/Study 83/04 Date Flown 5 Jan 76 Species Mule deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Ave. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check time 1-27

Observations M	F	JUV	U	Location Transect #	Notes and Comments
			1	2 top of Wagon Road Gulch	P-J/Sagebrush
			2	between N. Northern Gully & Duck Ck.	
			4	N. of Duck Ck.	
			3	3 gully N. of Ryan Gulch	
			2	4 S of Duck Creek	
			6	5 N. edge of Hunk Ridge (in a Gully)	
			3	S. edge of Ryan Gulch gully other side (S) Black Sulfur Gulch	
			5	6 top 84 Mesa ½ between Van Horn Corral & Gulch	
			3	7 N ridge of Stake Springs Gulch	
			4	bedded down in Stake Springs Gulch	
				8 none	
				9 none	
			1	10 Crossing Stake Springs Gulch	
			2	bedded down ~~on~~ top of 84 Mesa	P-J
				11 none	
				12-14 none	
			4	15 dry fork of Corral Gulch	
			4	N side Landing Strip Ridge	
			10	16 N side Landing Strip Ridge	
			5	17 very end of transect	
			11	page total ✓	

Total Animals Counted: 114 ✓ 94

Animal Distribution: Scattered benches east and South west ½ Tract C-a.

RBOSP PROGRESS REPORT

File No. 83C.6.1.3.3

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 2

Proj/Study 83/04 Date Flown 29 Jan 76 Species mule deer Survey Area RBOSP

Observers: R & CL Kling L & PL Kennedy Pilot/Aircraft L. Penn / Cessna 206

Start 0808 Finish 1040 Ave. Indicated Air Speed 80-85 Est. Altitude 50-20

Counting Conditions: Ground Cover good to excellent Light excellent Air excellent

Weather: Temp. 28/35 Wind SE @ 2 Cloud Cover 0/0 Analyst CLK QA Check Jan 2-27-

Observations M	F	JUV	U	Location (Transect #)	Notes and Comments
			6	1 gully S of Yellow Creek	
			2	S of Yellow Creek	
			3	N of road on Hunk Ridge	P/J
			4	2 S of Ryan Gulch	P/J
			2	S of Yellow Creek	P/J
			4	3 S of Van Horn Gully	
			4	Yellow Creek	
			3	S of pipeline	Sagebrush
			4	S of pipeline	Sagebrush
			1	ridgetop S of Ryan	P/J
			1	some ridgetops S of Ryan	P/J
			4	S of ridgetop S of Ryan	P/J and sagebrush
			3	4 N of Black Sulfur	P/J near tower
			2	S of Ryan Gulch	N facing Slopes
			4	portion of Hunk Ridge	Sagebrush + P/J
			1	Hunk Ridge	Sagebrush + P/J
			5	Hunk Ridge	
			7	S of road on Hunk Ridge	
			8	S of Yellow Creek	P/J + sagebrush
			5	5 Stake Springs	sagebrush bottom
			5	N of Wagon Road Ridge	P/J
			3	6 small gully on Hunk Ridge	P/J
			4	84 mesa	sagebrush
			4	7 S of Big Duck Creek	
			9	S of Van Horn Gully	
			5	84 mesa near pipeline	
			4	S of Stake Springs	
			81	page total	

Total Animals Counted: 95

Animal Distribution:

130/060175

RBOSP PROGRESS REPORT

File No. 6226 6.11.016

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 2

Proj/Study 83/04 Date Flown 29-Jan 76 Species mule deer Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Ave. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check bmm 2-27

Observations M	F	JUV	U	Location (transect #)		Notes and Comments
			6	7	ridge S of Ryan Gulch	by road P/J
			1	8	S of Ryan Gulch	N facing slope
			5		Wolf Ridge	
			5		Elmers	just N of Coral Gulch
						numerous mule deer N of Duck Creek
			1	9	N of Stake Springs	P/J
			12	9	Horse Draw	P/J sagebrush
			5	10	W of road on Elmers	
			1	12	S of Boxelder	Sage
			6	13	E gully	
			3	14	road in Coral Gulch	
			16	15	Sagebrush HM	S facing slope
			4		Airplane Ridge	N facing slope mixed brush
			12		Crest of Airplane Ridge	
			77	page total		
			184	grand total		

Total Animals Counted: 184 ✓ bmm 96

Animal Distribution: most east of Tract C-a but several groups just west of Tract C-a.

130/060175

130/060175

File No. 83.6.1.3.1.2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

1063

Proj/Study 83/04 Date Flown 23 Feb 76 Species Mule deer Survey Area RBOSF

Observers: R. F. C. L. Kling L. a P. Kennedy Pilot/Aircraft Len Paur / Cessna 206

Start 08 05 Finish 1037 Ave. Indicated Air Speed 85 85 Est. Altitude 150-200

Counting Conditions: Ground Cover good / excellent Light good Air good

Weather: Temp. 30° Wind SE 4 Cloud Cover 0/1 Analyst C. L. K. QA Check Tom 3-5-

Observations M	F	JUV	U	Transect #	Location	Notes and Comments
				1		numerous tracks in sagebrush at start
			3		point of 84 mesa	numerous tracks south of Yellow Creek
			2		small ridge south of Yellow Creek	broken sagebrush / P-J type
			3		halfway to flat area	P-J / Sagebrush
						numerous tracks near edge of Sagebrush
						and along pipeline
						few tracks on ridge immediately S of Ryan
			10		S of Ryan	S-facing slope p-j type
			9	2	after start of transect	
			5		north of Ryan Gulch	P/J Sagebrush
			2		South of Yellow Creek	P/J
				3		Numerous tracks on 84 Mesa South
						slopes bare
			6		South of Yellow Creek	P/J type
			20		Flat area before Ryan Gulch	Sage
			5	4	South of Van Horn Gully	P/J - sagebrush
				5		numerous tracks in P/J - sagebrush
			2		84 mesa	P-J sagebrush
			9		84 mesa	sagebrush
			15		Edge of Wolf Ridge	
			8		past Stake Springs	Sagebrush
			6		Flat area on Wagon Road Ridge	Sagebrush
circled #'s not included in tally			(4)	6	Wolf Ridge probably spotted before	Spotted in same area as transect # 5
			(8)		84 mesa	Bob Saw / I did it (C.L.K.) . off census
			8		84 mesa	—
			10	7	Wolf Ridge	P/J
				7		mainly old tracks on Hunk Ridge
			123	Subtotal + (6) ✓		

Total Animals Counted: 287

97

Animal Distribution: Mainly NE of Tract

RBOSF TRACT ... MENT

File No. _____

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 3

Proj/Study 83/04 Date Flown 23Feb76 Species Mule deer Survey Area RBOSP

Observers: RF C.L. Kling LR P.L. Kennedy Pilot/Aircraft Len Paur/Cessna 206

Start 0805 Finish 1037 Ave. Indicated Air Speed 75-85 Est. Altitude 150-20

Counting Conditions: Ground Cover good/excellent Light good Air good

Weather: Temp. 30°F Wind SC4 Cloud Cover 0/1 Analyst PLK, CLK QA Check [illegible] 5-5-76

Observations M	F	JUV	U	Location	Notes and Comments
			22	8 84 mesa South of road	sagebrush
			1	9 bottom of Corral Gulch	Fewer tracks on wolf Ridge her
			4	10 84 mesa, north of road	than on lower transects
				↘	Sagebrush
				11	numerous tracks in P-j type nort
					of Corral Gulch
			5	north of pipeline	sagebrush
			1	12 South of A Gully	P-J type
				13	tracks of A Gully P/J type
					numerous tracks on Corral Gulch
					and area north of landing
					Strip Ridge.
				15	deer tracks between Dead Horse
					& Sagebrush-north of Big Buck Creek
					& Dead Horse
			8	1 South of Stick Gully	P-j sagebrush ecotone
			2	1 ½ mile north of road along	P-j type
				Hunk Ridge	
			9	1 South of road on Hunk Ridge	P-j type
			14	2 ridge west of confluence	P-j sagebrush ecotone
				of Yellow Cr. and N. Van	
				Horn Gully	
			3	3 Hunk ridge; about ¼ mile	Sagebrush
				from southern section line	
				of section 28	
	8		3	3 Wagon road ridge	P-j type
			72	page total ✓	

Total Animals Counted: (287) ✓ 98

Animal Distribution:

RBOSP PROGRESS REPORT

File No. _____

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 3 of 3

Proj/Study 83/04 Date Flown 23 Feb 76 Species Mule Deer Survey Area RBOSP

Observers: R F Clkling L R Pkennedy Pilot/Aircraft Len Paur / Cessna 0

Start 0805 Finish 1037 Ave. Indicated Air Speed 75-85 Est. Altitude 150-

Counting Conditions: Ground Cover good/excellent Light good Air good

Weather: Temp. 30°F Wind SE 4 Cloud Cover 0/1 Analyst RK, CLK QA Check [illegible] 5-5

Observations M	F	JUV	U	Location	Notes and Comments
			12	1 84 mesa - South of N. Van Horn Gully	Paur saw 12; I saw 1 - sagebru
			5	5 Hankridge: gully intermittent with Stake Springs Draw	p-j type
			2	5 ½ mile south of the 5 seen in the intermittent gully	p-j type
			5	6 road along Stake Springs Draw	2 deer were collared
			12	7 north of Duck Creek	p-j/sagebrush ecotone
			7	7 84 mesa - north of road	sagebrush
			7	7 84 mesa - north of road	sagebrush
			3	7 North of corral Gulch	sagebrush - Len Paur sighted
			3	7 north of Ryan Gulch	p-j type
			7	8 north of N. Van Horn Gully	sagebrush
			2	9 road along Duck Creek	
			12	9 ½ mile north of the road on 84 mesa	
			9	10 84 mesa - south of road	sagebrush
			3	11 - South of "B" gully	p-j type; Len Paur saw 3; I saw
+	+		2	13 in Corral Gulch	
			1	13 north slope of Box Elder Gulch	along sandstone cliffs
		✓	12	pregnant	

Total Animals Counted: 287

99

RBOSP PROGRESS REPORT

Animal Distribution: mainly N.E of Tract

130/060175

( ) Fl No. 83C6.6.3.1.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/04 Date Flown 4 Dec 75 Species Elk Survey Area RBOSP

Observers: R CLKling L PLKennedy Pilot/Aircraft Les Paul / Cessna 2

Start 0741 Finish 1012 Avg. Indicated Air Speed 80-85 Est. Altitude 150-20

Counting Conditions: Ground Cover Fair Light Excellent Air Excellent

Weather: Temp. 38/33° Wind E2/50 Cloud Cover 0/0 Analyst CLK, PLK QA Check [illegible] 1-19-

Observations M	F	JUV	U	Location	Notes and Comments
					No elk observed on this flight.

Total Animals Counted: 0 100

Animal Distribution:

RBOSP PROGRESS REPORT

130/060175

File No. 83C 6.6. 3.

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/04 Date Flown 18 Dec 75 Species ELK Survey Area RBOSP

Observers: R F CL Kling L R J.R. Rees Pilot/Aircraft Lon Penn / Cessna 206

Start 0840 Finish 1111 Avg. Indicated Air Speed 80-85 mph Est. Altitude 150-200

Counting Conditions: Ground Cover Excellent Light Excellent Air Excellent

Weather: Temp. 15/25F Wind 1/0 Cloud Cover 0/0 Analyst CLK QA Check [illegible] 12-20-75

Observations M	F	JUV	U	Location	Notes and Comments
					No elk observed on this survey

Total Animals Counted: NONE Observed. 101

Animal Distribution:

RMSEP PROGRESS REPORT

File No. 83C 6.6. 3. 1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/04 Date Flown 5 Jan 1976 Species Elk Survey Area BBOSP

Observers: R CLKling L D Keefe Pilot/Aircraft Lon Paus/Cessna 206

Start 0802 Finish 1039 Ave. Indicated Air Speed 80-85 mph Est. Altitude 150-20

Counting Conditions: Ground Cover Excellent Light Fair Air Poor

Weather: Temp. 25/20 Wind SE 3/1 Cloud Cover 3/3 Analyst CLK QA Check [illegible] 1-27-

Observations				Location	Notes and Comments
M	F	JUV	U		
					No animals observed

Total Animals Counted: 0

Animal Distribution:

102

RBOSP PROGRESS REPORT

File No. 8366.4.5.1.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/01 Date Flown 29 Jan 76 Species elk Survey Area RBOSP

Observers: R F CL Kling L R PL Kennedy Pilot/Aircraft L.F. Paur / Cessna 2

Start 0808 Finish 1040 Ave. Indicated Air Speed 80-85 Est. Altitude 10-20

Counting Conditions: Ground Cover good to excellent Light excellent Air excellent

Weather: Temp 28/35°F Wind SE @ 2 Cloud Cover 0/0 Analyst CLK QA Check [illegible] 2-27

Observations M	F	JUV	U	Location	Notes and Comments
					No elk observed

Total Animals Counted: 0

Animal Distribution:

RBOSP PROGRESS REPORT

File No. 83C6.6.3.1.2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 1

Proj/Study 83/01 Date Flown 23Feb76 Species Elk Survey Area RBOSP

Observers: R F Ch Kling L F Ph Kennedy Pilot/Aircraft Len Pour / Cessna 206

Start 0805 Finish 1037 Ave. Indicated Air Speed 75-85 Est. Altitude 150-200

Counting Conditions: Ground Cover good / excellent Light good Air good

Weather: Temp. 30°/36°F Wind SE 4 Cloud Cover 0/1 Analyst PK/CK QA Check Lwm 3-5-

Observations M	F	JUV	U	Location	Notes and Comments
			8	Transect 17 N of Big Duck Creek	mixed brush habitat
			3	18 N fork of Big Duck Creek	
			(11)		

Total Animals Counted: 11 ✓ 104

Animal Distribution: North west of Trout.

RBOSP PROGRESS REPORT

130/060175

File No. [illegible], 6.6.3.1.2

1 of 1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83104 Date Flown 4 Dec 1975 Species Feral horse Survey Area RBOSP

Observers: R F CL Kleiber L R PL Kennedy Pilot/Aircraft Lee Penn / Cessna 206

Start 0741 Finish 1012 Avg. Indicated Air Speed 80-85 Est. Altitude 150-200

Counting Conditions: Ground Cover fair Light Excellent Air Excellent

Weather: Temp. 34 / 33 Wind E2 / S0 Cloud Cover 0 / 0 Analyst CLK, PLK QA Check [illegible] 1-17-76

Observations M (Adult)	F (Adult)	JUV	U	Location		Notes and Comments
	5	2		11 transect	84 mesa	2 white/gray 2 bay 1 sorrel juvs = dark
	2			13	Pass Gulch	sorrel & dark
	1			15	Airplane Ridge	white
	10				Between road & landing strip	3 white, 3 dark, 3 sorrel, 1 bay
			5	18	start of transect	2 black 1 white 2 dark
				19	near end on bluff top	3 gray, 3 bay/brown calling, 1 dark, 2 gray
	14	3		↓	.	4 chestnut juvs = 1 dark, 1 chestnut 1 strawberry roan
	8	3		3	mesa north of Yellow Creek	Sagebrush
	12			6	South of North Van Horn Gulch	
	4			16	Landing Strip Ridge	mixed shrub habitat 1 white, 3 red, 2 blk

	56	8	5	

Total Animals Counted: (69) 105

Animal Distribution: 84 mesa and west of Tract,

RBOSP PROGRESS [illegible]

File No. 83.6.6. 3d2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

1 of 1

Proj/Study 83/61 Date Flown 18 Dec 75 Species Feral Horse Survey Area RBOSP (2)

Observers: R F CLKling L R JR Rose Pilot/Aircraft Len Rose / Cessna 206

Start 0840 Finish 1111 Avg. Indicated Air Speed 80-85 mph Est. Altitude 150-200

Counting Conditions: Ground Cover Excellent Light Excellent Air Excellent

Weather: Temp. 15/25°F Wind 1/0 Cloud Cover 0/0 Analyst CLK QA Check [illegible] 1-20-76

Observations				Location	Notes and Comments
					Dead Horse between transects 4 and 5 on 84 mesa near road
	7	1		6 84 mesa	5 = dark-sorrel-gray = 2 1 small dark
			3	7 N of Corral Gulch	6 sorrel 2 black
			4	10 84 mesa midway	3 sorrel 1 dark
	4	1		18 On pipeline	1 sorrel 3 dark 1 small dark
			4	19 on last ridge at end of transect	all dark
			2	15 Box Elder Gulch	
			15	16 Landing Strip Ridge	
			1	Airplane Ridge	white
			2	18 Top of Landing Strip	
			5	19 ridge at the end.	
	11	2	116		

Total Animals Counted: 59 ✓ 106

Animal Distribution: 84 mesa and SW of Trail Ca

RBOSP PROGRESS REPORT

e No. 85 C 6.6.3.1.

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 1

Proj/Study 83/61 Date Flown 5 Jan 1976 Species Feral Horse Survey Area RBOSP

Observers: R CL Kling L D Koefe Pilot/Aircraft Len Paul / Cessna 206

Start 0802 Finish 1039 Ave. Indicated Air Speed 80-85 Est. Altitude 150-2

Counting Conditions: Ground Cover Excellent Light Fair Air Poor

Weather: Temp. 25/22 Wind SE 3/1 Cloud Cover 3/3 Analyst CLK QA Check [illegible] 1/27/76

Observations Adult	JUV	U	Location	Notes and Comments
			Transect #	
6			13 North of Snake Spring	5 Black 1 Grey
6			15 Dead Horse Ridge	S Facing Slope 4 Dark 2 sorrel
1			16 Sagebrush Hill	ridge Top
5	1		17 at end of transect	3 dark 1 grey 1 sorrel juv = dark
			Transect #	
6			7 top of 84 Mesa	just at head of N. Van Horn Gulch
6			8 top of 84 Mesa	about 1 mile N. of Corral Gulch
15			15 N. ridge Box Elder Gulch	
4			N side Landing Strip Ridge	
2			17 at end of transect in Cross Gulch	
6			18 head of Spruce Gulch	
4			19 edge of Airplane Ridge	
3			very end of last transect	top of Cathedral Bluffs, about at head of Cross Gulch
			. . . . .	. .
81	1		page total	

Total Animals Counted: 85 ✓ 107

Animal Distribution: 84 mean west of Trail C-a

RBOSP PROGRESS REPORT

File No. 8306.6.3.1.2

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/61 Date Flown 29 Jan 76 Species feral horse Survey Area RBOSP

Observers: R & CL Kling L & PL Kennedy Pilot/Aircraft L.F. Penn / Cessna 00

Start 0808 Finish 1040 Ave. Indicated Air Speed 80-85 Est. Altitude 50-

Counting Conditions: Ground Cover good to excellent Light excellent Air excellent

Weather: Temp. 30/35 Wind SE 2 Cloud Cover 0/0 Analyst CLK QA Check Erin 2-2

Observations Adult	JUV	U	Location (Transect #)	Notes and Comments
2			1 Flat on Dark Ridge	1 dark 1 sorrel
3			8 84 mesa	south of canal Gulch
5			9 84 mesa	4 sorrel 1 gray
7			13 S of pipeline	3 black others mixed.
7			14 Dead Eagle Ridge	
7			near net tower	1 white 1 black rest were reddish brown
8			16 S of Landing Strip Ridge	
4			Airplane Ridge	1 sorrel 3 bay
4			17 Airplane Ridge	1 white 2 black 1 dark gray
47				

Total Animals Counted: 47 ✓ 108

Animal Distribution: 84 mesa and west of Tract C-a.

RBOSP PROGRESS REPORT

File No. 83C 6.1.3.1.3

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 1

Proj/Study 83/61 Date Flown 23 Feb 76 Species Feral Horse Survey Area RBOSP

Observers: R F CL Kling L R PL Kennedy Pilot/Aircraft Lon Paur/Cessna 20

Start 0805 Finish 1037 Ave. Indicated Air Speed 75-85 Est. Altitude 150-20

Counting Conditions: Ground Cover good/excellent Light good Air good

Weather: Temp. 30° Wind SW 4 Cloud Cover 0/1 Analyst PLK CLK QA Check [illegible] 3-5-7

Observations ~~Adult~~	~~Subadult~~	JUV	U	Location (Transect #)	Notes and Comments
			6	7 N of road on 84 mesa	4 bay 2 dark
	4	1		12 N of Stake Springs	4 big dark 1 small dark sagebrush
not counted in final total			1	15 North of Airplane Ridge	(B.O. Elderkin saw it.)
	5	2	-	16 near send	dark + sorrels
	1	1		1 North of road on Hunt Ridge	black adult w white spot on forehead; bay colt - sagebrush
	2			11 south of road around Big Duck Creek.	red and black; pinyon-juniper
			3	13 Landing Strip Ridge	?
	6			14 Landing Strip Ridge	2 white, 1 black, 1 gray, 1 red, 1 unknown
	7			15 Dead Eagle Ridge	1 white; 2 roan, 2 black; 1 bay, 1 unknown in mixed brush community
	1			18 Spruce Gulch	1 red; mixed brush
	5			18 Dead Pig Ridge	mixed brush
	31	4	9		

Total Animals Counted: (44 + (1) ✓ 109

Animal Distribution: [illegible] small bands.

130/060175

RBOSP PROCESSED REPORT

2.3.5 Mammalian Predators

2.3.5.1 Introudction

No changes have been implemented since the Second Annual Report. See Section 7.2.C.1 in the Second Annual Report for the objectives of the mammalian predator program.

2.3.5.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.C.2 in the Second Annual Report for specific methods used in the mammalian predator program.

2.3.5.3 Results

Predator scent stations were operated February 25-29, 1976. Snow drifts along Cathedral Bluffs Road prevented access to scent stations 1-8 on route A and 44-50 on route B. The number of operable scent stations was further reduced by melting snow and occasional gusty winds, which combined to obliterate tracks and upset scent capsule supports. The results of scent station sampling in February 1976 are presented in Table 2.3-18.

Coyote visits to scent stations on both survey routes were 2.5 times as numerous as weasel visits. The highest number of coyote visits recorded on any one day was three (days 1 and 5), while two was the highest number of weasel visits recorded on any one day.

Siren censuses were conducted on February 26 and 28, 1976. Stations 6 and 7 along Cathedral Bluffs Road were inaccessible both nights, and wind gusts over 10 mph eliminated one additional station on February 26 and two stations on February 28. The siren census results are shown in Table 2.3-19.

Havahart live traps were set and checked during the December 1975 small mammal sampling period, but no mammalian predators were captured.

Table 2.3-18

SCENT-STATION VISITATION RESULTS FOR
FEBRUARY 1976 FOR RBOSP

	Day						
	1	2	3	4	5	Total	Index[1]
Route A							
operable stations	34	27	24	30	33	148	
coyote visits	2	1	1	1	2	7	47.30
weasel visits	0	0	2	1	1	4	27.03
Route B							
operable stations	40	25	33	32	31	161	
coyote visits	1	1	0	0	1	3	18.6
weasel visits	0	0	0	0	0	0	0.0

1/ Index (by species) = $\frac{\text{Total Number of Visits by Species}}{\text{Total Number operable Station Nights}} \times 1000$

Table 2.3-19

COYOTE SIREN CENSUS RESULTS FOR FEBRUARY 1976
FOR RBOSP

Date	No. Stations	No. stations w/response	No. resp. groups	Indices	
				Station response 1/	Group response 2/
February 26	8	4	6	50%	75%
February 28	7	4	5	57%	71%

1/ Station Response Index (%) = $\frac{\text{Total number of stations with response}}{\text{Total number of stations}} \times 100$

2/ Group Response Index (%) = $\frac{\text{Total number of groups responding}}{\text{Total number of stations}} \times 100$

2.3.5.4 Mammalian Predator Raw Data

2.3.5 Mammalian Predators

832.7.3.2

ecology consultants, Inc

SIREN-ELICITED HOWLING RESPONSE

Location Rio Blanco Project No. 83 Date 26 February, 1976 Investigators Sanz / Baker

Survey Route in scope of work, less those portions along unplowed roads Weather clear, cool

Station Number	Time	Response to First Sounding Groups	Response to First Sounding Individual	Response to Second Sounding Groups	Response to Second Sounding Individual	Total Response Groups	Total Response Individual	Notes on conditions affecting dat wind; proximity to humans, etc.
1	19:47 ~~20:47~~	1	5+	—	—	1	5+	
2	20:18	—	—	—	—	—	—	
3	20:40	—	—	—	—	—	—	great horned owl heard
4 ≈	21:10	—	—	—	—	—	—	≈wind 4 mph
5	21:43	—	—	—	—	—	—	≈wind 5 mph
6 and 7	unaccessible							
8	22:45 wind							gusts over 10 mph
9	23:12	—	—	3	10+	3	10 +	
10	23:46	—	—	1	1	1	1	
11	29 February 0.07	1	2	—	—	1	2	

NBOSP PROGRESS REPORT

ecology consultants, inc.

SIREN-ELICITED HOWLING RESPONSE

cation Rio Blanco Project No. 83 Date 28 February, 1976 Investigators Sanz / Baker

rvey Route on map (less those portions along unplowed roads Weather clear, cool

Station Number	Time	Response to First Sounding Groups	Response to First Sounding Individual	Response to Second Sounding Groups	Response to Second Sounding Individual	Total Response Groups	Total Response Individual	Notes on conditions affecting data; wind; proximity to humans, etc.
1	20:24	—	—	1	1	1	1	far away to North
2	20:48	—	—	—	—	—	—	
3	21:11	—	—	—	—	—	—	great horned owl heard
4	21:35	1	2	—	—	1	2	
5	22:05	~	~	~	~	~	~	wind, gusts over 10 mph
8	23:07	—	—	1	4	1	4	wind ≈ 7-8 mph
9	23:41	~	~	~	~	~	~	wind, gusts over 10 mph
10	00:08	2	5+	—	—	2	5+	great horned owl
11	00:33	—	—	—	—	—	—	
20								

NOAA PROGRESS REC

83 C 7.1.6

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, Inc.

Location Rio Blanco A Proj. No. 83 Date 25 Feb '76 Day # 1

Investigator Sanz Survey Route A (on map)

from 3-5-76 Weather clear cool

X roads impassible	26
X	X fell over
X	X fell over
X	29
X	30
X	31
X	X fell over
X	33
9	X destroyed by bird (crow?)
10	X snow melted
11	36
12 elk	37
13	38
14	X fell over
15	40
16	X fell over
17	X snow melted
18	(43) coyote
19	44
20	45
21	46
(22) coyote	47
23	48
24	49
25	50

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio BLANCO A Proj. No. 83 Date 26 Feb. 1976 Day # 2

Inveetigator Sanz Survey Route A (on map)

Snow 3-5-76 Weather clear, snow melting

1 roads impassible	26
2	27 run over by vehicle
3	28 snow melted
4	29
5	30 fell over
6	31 fell over
7	32 fell over
8	33
9	34 fell over
10	35 Snow melted
11	36 fell over
12 deer	37
13	38
14	39
15	40
16	41 snow melted
17 fell over	42 snow melted
18 cottontail	43 coyote
19	44
20	45
21	46
22	47 snow melted
23	48
24	49 fell over
25 fell over	50 fell over

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, Inc.

Location Rio BLANCO A Proj. No. 83 Date 27 Feb. 76 Day # 3

Investigator Sanz Survey Route A (on map)

Snow 3-5-76 Weather clear, warm

~~1~~	roads impassible	26	
~~2~~		~~27~~	fell over
~~3~~		~~28~~	snow melted
~~4~~		29	
~~5~~		30	
~~6~~		~~31~~	snow melted
~~7~~		~~32~~	snow melted
~~8~~		33	deer
9		34	
10		~~35~~	snow melted
(11)	weasel	~~36~~	washed away
12		37	
~~13~~	fell over	~~38~~	fell over
14		39	
(15)	weasel	40	
(16)	coyote	~~41~~	fell over
17		~~42~~	snow melted
~~18~~	fell over	43	deer
~~19~~	washed away	44	mouse
20		~~45~~	fell over
~~21~~	snow melted	46	
~~22~~	mud splashed on it	47	
~~23~~	fell over	~~48~~	washed away
24		~~49~~	fell over
25		50	

IBOOP PROGRESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio Blanco A Proj. No. 83 Date 28 Feb. 76 Day # 4

Investigator Sanz Survey Route A (on map)

bm 3-5-76 Weather cloudy, windy

X	roads impassible	26	
X		27	
X		28	
X		29	
X		~~30~~	snow melted
X		31	
X		~~32~~	snow melted
X		33	
9		~~34~~	snow melted
10		35	deer
11		36	
~~12~~	fell over	37	mouse
(13)	coyote	38	
14		39	
15		~~40~~	snow melted
~~16~~	fell over	41	
~~17~~	fell over	~~42~~	fell over
~~18~~	fell over	43	
19		44	
20		45	
21		46	
~~22~~	fell over	47	
23		~~48~~	fell over
24		49	
(25)	weasel	~~50~~	fell over

RBOSP PROGRESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, Inc.

Location Rio Blanco A Proj. No. 83 Date 29 Feb. '76 Day # 5

Investigator Sang Survey Route A (on map)

lrm 3-5-76 Weather cloudy, windy

X	roads impassible	26	snow melted
X		27	
X		28	
X		29	
X		30	
X		31	
X		32	snow melted
X		33	
(9)	weasel	34	
10		35	
11		36	fell over
12		37	
13		38	ground squirrel
14		39	
15		40	
(16)	coyote	41	fell over
17		42	fell over
18		43	
19		44	
20	fell over	45	mouse
21	fell over	46	
22	snow melted	47	
23		48	fell over
24	deer	(49)	coyote
25		50	

MISSING PAGES IN ORIGINAL

83C7.1.2

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio Blanco B Proj. No. 83 Date 25 Feb '76 Day # 1

Investigator Sanz Survey Route B (on map)

burn 3-5-76 Weather clear, cool

1		26	
2		27	
3		28	
4		29	mouse
5		30	
6		31	
7		32	mouse
8		33	deer
9		~~34~~	fell over
10		35	
11		36	
12		37	
13		38	
14		39	
15		(40)	coyote
16		41	
17		42	
18		43	
19		~~44~~	roads impassible
20		~~45~~	
21	chipmunk	~~46~~	
~~22~~	snow melted	~~47~~	
23		~~48~~	
24		~~49~~	
~~25~~	fell over	~~50~~	

RBUSP PROGRESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, Inc.

Location Rio Blanco B Proj. No. 83 Date 26 Feb. 1976 Day # 2

Investigator Sanz Survey Route B (on map)

from 3-5-76 Weather clear, snow melting

X fell over	26 ~
X snow melted	27 Snow melted
X snow melted	28 ~
X snow melted	29 ~
5 ~	30 fell over
6 ~	31 fell over
7 ~	32 ~
X fell outer	(33) coyote
9 ~	34 snow melted
10 fell over	35 ~
11 fell over	36 ~
12 deer	37 ~
13 ~	38 ~
14 ~	39 ~
15 ~	40 ~
16 ~	41 ~
17 fell over	42 ~
18 ~	43 ~
19 fell over	44 roads impassible
20 fell over	45
21 fell over	46
22 fell over	47
23 ~	48
24 fell over	49
25 snow melted	50

RSOSP PROCESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, Inc.

Location Rio Blanco B Proj. No. 53 Date 27 Feb 76 Day # 3

Investigator BAKER Survey Route B (see map)

from 3-5-76 Weather clear, warm

~~1~~	snow melted	~~26~~	fell over
2	—	~~27~~	fell over
3	—	28	—
4	—	~~29~~	snow melted
5	—	30	—
6	—	31	—
7	—	32	—
8	—	33	—
9	—	~~34~~	fell over
10	—	35	—
11	—	36	—
12	—	37	—
13	—	38	—
14	—	~~39~~	snow melted
15	—	40	—
16	—	41	—
~~17~~	capsule fell over	~~42~~	fell over
~~18~~	snow melted	43	—
19	—	~~44~~	road impassible
20	—	~~45~~	
21	—	~~46~~	
~~22~~	fell over	~~47~~	
23	—	~~48~~	
24	—	~~49~~	
25	—	~~50~~	

REOSP PROGRESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, inc.

Location Rio Blanco B Proj. No. 83 Date 28 Feb 76 Day # 4

Investigator Baker Survey Route B on map

bum 3-5-76 Weather warm, partly cloudy

X	snow melted	X	snow melted
2		27	
3		28	
X	snow melted	X	snow melted
X	fell over	30	
6		31	
7		32	
8		33	
9		X	snow melted
10		35	
11		36	
12		37	
13		38	
14		X	snow melted
X	fell over	40	
16		41	
17		42	
18		43	
19		X	road impassible
20		X	
21		X	
X	snow melted	X	
23		X	
X	snow melted	X	
X	snow melted	X	

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PROJECT PROGRESS REPORT

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio Blanco Proj. No. 83 Date 29 Feb 76 Day # 5

Investigator Baker Survey Route B (on map)

bmw 3-5-76 Weather cloudy, windy

X 1	snow melted	26	
X 2	fell over	27	
3		X 28	snow melted
X 4	snow melted	X 29	fell over
5		X 30	snow melted
6		31	
X 7	fell over	X 32	fell over
8		33	
9		X 34	snow melted
10		35	
11		36	
12		37	
(13)	coyote	38	
14		X 39	snow melted
15		40	
16		41	
17		42	
18		43	
19		X 44	road impassible
20		X 45	
21		X 46	
22		X 47	
23		X 48	
X 24	fell over	X 49	
X 25	fell over	50	

BIOSP PROGRESS REPORT

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2.3.6 Winter Track Counts

2.3.6.1 Introduction

No changes have been implemented since the Second Annual Report. See Section 7.2.E.1 in the Second Annual Report for the objectives of the winter track count program.

2.3.6.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.E.2 in the Second Annual Report for specific methods used in the winter track count program.

2.3.6.3 Results

Winter track count transects were established at eight of the fourteen small mammal grid locations. Grids 7, E, F, and G (upland meadow, mixed brush, Douglas-fir, and aspen, respectively) were inaccessible due to heavy snow accumulation on Cathedral Bluffs, and snow cover on grids 3 and B (rabbitbrush and pinyon-juniper/south slope, respectively) was insufficient to establish track count transects; consequently, these six grids were not sampled.

In addition, warm weather and clear skies caused rapid snow melt and excessive bare ground at the three lowest elevation locations (bottomland meadow, greasewood-sagebrush, and sagebrush/flat), resulting in the collection of one day's data for these three transects. Two collecting periods totalling approximately 48 hours were completed during February 25-27, 1976 for each of the five remaining transects.

The track count results for each transect sampled are summarized in Table 2.3-20. Table 2.3-21 shows, for each transect sampled, the relative abundances of tracks corrected to 24-hour transect time exposure.

The tracks of at least six animal species were encountered on the eight transects surveyed. Mule deer tracks were the most common of any tracks recorded. The greatest number of species was encountered on transects traversing the pinyon-juniper vegetation type.

In north slope/pinyon-juniper and pinyon-juniper/sagebrush the tracks of at least four species were recorded. In pinyon-juniper/mixed brush the tracks of at least three species were recorded. Cottontail, chipmunk and mouse/vole tracks were recorded on all three pinyon-juniper transects. Chipmunks are normally torpid during the cold winter months. However, when the transects were surveyed, daytime ambient temperatures were unseasonably high, which may explain the unusually high number of chipmunk track crossings observed.

Table 2.3-20 Total number of track crossings of each species observed on winter track count transects, February 25 and 26, 1976 for RBOSP

Species	Vegetation Type/Transect Number								
	Greasewood-Sagebrush A	Pinyon-Juniper (north) C	Sagebrush (north) D	Bottomland Meadow 1	Sagebrush (flat) 2	Pinyon-Juniper Mixed Brush 4	Mixed Brush 5	Pinyon-Juniper Sage 6	TOTAL
Mule deer (Odocoileus hemionus)	1	24	0	0	12	0	0	0	37
Cottontail (Sylvilagus sp.)	0	1	0	0	0	3	0	2	6
Chipmunk (Eutamias sp.)	0	3	0	0	0	4	0	1	8
Mouse, Vole (Peromyscus sp. Microtus sp.)	0	2	1	0	0	5	0	1	9
Coyote (Canis latrans)	0	0	3	0	0	0	0	0	3
Weasel (Mustela sp.)	0	0	0	0	0	0	0	1	1
TOTAL	1	30	4	0	12	12	0	5	64
Total number of hours each transect was exposed for tracks (two counts)	24	46.5	48.5	24	24	48	45.5	48.5	

Table 2.3-21 Relative number of track crossings[1/] obtained from winter track counts for each species on each transect, February 25 and 26, 1976 for RBOSP

Species	Vegetation Type/ Transect Number								
	Greasewood Sagebrush A	Pinyon Juniper (north) C	Sagebrush (north) D	Bottomland Meadow 1	Sagebrush (flat) 2	Pinyon-Juniper Mixed Brush 4	Mixed Brush 5	Pinyon-Juniper Sage 6	TOTAL
Mule deer (Odocoileus hemionus)	1	12.4	0	0	12	0	0	0	25.4
Cottontail (Sylvilagus sp.)	0	0.5	0	0	0	1.5	0	1	3
Chipmunk (Eutamias sp.)	0	1.5	0	0	0	2	0	0.5	4
Mouse, Vole (Peromyscus sp. Microtus sp.)	0	1	0.5	0	0	2.5	0	0.5	4.5
Coyote (Canis latrans)	0	0	1.5	0	0	0	0	0	1.5
Weasel (Mustela sp.)	0	0	0	0	0	0	0	0.5	0.5
TOTAL	1	15.4	2	0	12	6	0	2.5	38.9
Total number of species	1	4	2	0	1	3	0	4	6

1/ Corrected to 24 hours exposure time.

2.3.6.4 Winter Track Count Raw Data

2.3.6 Winter Track Counts

83C8.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb 1974 1230 Transect Name/Number Greasewood-Sage A

Snow Condition wet, melting, wind blown crusted

Date/Time of Last Snow or Erasure 24 Feb 1974 Project 83 Observer [illegible]

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Deer	1	1	

RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

Lum 3-4-76

062/060175

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb 1976 11[illegible] Transect Name/Number [illegible]-juniper (North) C

Snow Condition wet melting, good cover

Date/Time of Last Snow or Erasure 24 Feb 1430 Project [illegible] Observer BAKER L

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Deer	1111 22 1111111111111	21	
Chipmunk (Eutamias sp.)	111	3	
Mouse, vole (Peromyscus, Microtus)	1	1	
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

125

bum 3-4-76

062/060175

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 21 Feb 1926 1500 Transect Name/Number [illegible]

Snow Condition wet good cover

Date/Time of Last Snow or Erasure 25 Feb 1600 Project E3 Observer RIKER

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Mouse/Vole (Peromyscus, Microtus)	1	1	
Mule Deer	III	3	
Cottontail (Sylvilagus sp.)	1	1	
			RBOOP PROGRESS REPORT

*Track pattern, measurements, etc.

126

Sum 3-4-70

062/060175

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb. 1976 1030 Transect Name/Number Sagebrush (North) D

Snow Condition wet snow good cover

Date/Time of Last Snow or Erasure 24 Feb 1100 Project 83 Observer Baker

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Mouse/vole (Peromyscus, Microtus)	1	1	
coyote	1	1	

RECOP PROGRESS REPORT

*Track pattern, measurements, etc.

127

bm 3-4-76

83C 1.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 26 Feb 1926 1130 Transect Name/Number Sagebrush (North) 1

Snow Condition wet, melting, small crust

Date/Time of Last Snow or Erasure 25 Feb 1030 Project E3 Observer BAKER

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Coyote	11	2	

RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

bm 3-4-76

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb 1976 1200 Transect Name/Number P-Line Willow / 1

Snow Condition wet, melting [illegible] grid

Date/Time of Last Snow or Erasure 24 Feb 1200 Project SE Observer Baker

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
No tracks			
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

129

bm 3-4-76

062/060175

ecology consultants, inc.

83 C 8.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb. 1976 1130 Transect Name/Number Eyebrow (Hat) / 2

Snow Condition wet snow, melting, patches of skin ground

Date/Time of Last Snow or Erasure 26 Feb 1130 Project 83 Observer Eckert

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Deer	1111/1111111	12	
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

130

Ann 3-4-76

33C 8.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb 1976 1320 Transect Name/Number Railroad Grade 4

Snow Condition wet good crust

Date/Time of Last Snow or Erasure 24 Feb 1300 Project 82 Observer BAKER

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Chipmunk (Eutamias sp.)	111	3	
Mouse or Vole Peromyscus or Microtus	111	3	
Cottontail (Sylvilagus sp.)	11	2	
			IBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

bmw 3-4-76

ecology consultants, inc.

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 26 Feb 1976 1200 Transect Name/Number Big Bend Branch 14

Snow Condition wet granular

Date/Time of Last Snow or Erasure 25 Feb 1330 Project 53 Observer RBOSP

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Chipmunk (Eutamias sp.)	1	1	
Mouse, Vole (Peromyscus, Microtus)	11	2	
Cottontail (Sylvilagus sp.)	1	1	
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

lum 3-4-76

83C82

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 26 Feb 1976 1400 Transect Name/Number Wood Draw 2/5

Snow Condition wet good ice

Date/Time of Last Snow or Erasure 25 Feb 1500 Project 83 Observer DEF ER

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
No tracks			
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

Sum 3-4-7

8320.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 27 Feb 1976 1230 Transect Name/Number [illegible] 1/5

Snow Condition wet [illegible]

Date/Time of Last Snow or Erasure [illegible] Project [illegible] Observer [illegible]

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
NO TRACKS	—		
			RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

[illegible] 3-4-7

53C8:2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 25 Feb 1976 1000 Transect Name/Number [illegible] / 6

Snow Condition [illegible]

Date/Time of Last Snow or Erasure 24 Feb 1000 Project 83 Observer Baker

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Weasel (Mustela sp.)	1	1	
Cottontail (Sylvilagus sp.)	1	1	
Mouse, Vole (Peromyscus, Microtus)	1	1	

RECAP PROGRESS REPORT

*Track pattern, measurements, etc.

Burn 3-4-76

03C 0.2

WINTER TRACK COUNT FIELD DATA SHEET

Date/Time 26 Feb 1976 1030 Transect Name/Number P.J/Sagebrush 6

Snow Condition wet some blowing wind

Date/Time of Last Snow or Erasure 25 Feb 1510 Project E3 Observer BAKER

Species	Number of Crossings	Total Number of Crossings	Additional Notes*
Chipmunk (Eutamias sp.)	1	1	
Cottontail (Sylvilagus sp.)	1	1	

RBOSP PROGRESS REPORT

*Track pattern, measurements, etc.

bum 3-4-76

2.3.7 Avifauna

2.3.7.1 Introduction

No changes have been implemented since the Second Annual Report. See Section 7.2.D.1 in the Second Annual Report for the objectives of the avifauna program.

2.3.7.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.D.2 in the Second Annual Report for specific methods used in the avifauna program.

2.3.7.3 Results

Inclement weather forced postponement of the February 1976 quantitative and qualitative general avifauna sampling program until March 1976. These data will be reported in Progress Report 7. An aerial raptor survey was conducted on January 28, 1976 and night owl surveys were conducted on January 28 and 29, 1976.

One golden eagle and five common ravens were observed on the aerial census. Four of these six birds were observed along Cathedral Bluffs. Four species of owls were recorded on the night surveys (Table 2.3-22). The saw-whet owl and the great-horned owl were the most abundant owl species recorded. The long-eared owl was recorded for the first time in the study area This species is an uncommon resident in the woodlands of Western Colorado (Davis, 1969).

Opportunisitc bird sightings during the reporting quarter December 1975 through February 1976 included: the sage grouse, the goshawk, the golden eagle, the bald eagle, the red-tailed hawk, and the prairie falcon. During the winter quarter, the common raven was the most frequently observed raptorial bird.

Table 2.3-22

OWL SPECIES ENCOUNTERED ON NIGHT TRANSECTS
DURING WINTER, 1976 FOR RBOSP

Species	Total Number Observed Jan. 28	Jan. 29	Total	% Relative Abundance (both nights) 1/
Great horned owl	5	1	6	27.3
Short-eared owl	0	1	1	4.6
Long-eared owl	1	2	3	13.6
Saw-whet owl	3	9	12	54.5
TOTAL	9	13	22	100.0

1/ Percent Relative Abundance = $\frac{\text{Total number of individual species A}}{\text{Total Number of individuals all species}} \times 100$

2.3.7 Avifauna

8 SC1.4.4.1.
P4

AERIAL RAPTOR CENSUS REPORT AND SUMMARY FORM

Project/Study 83/66 Date Flown 1/28/76 Survey Area RBOSP

Observers: R Front / Pat Kennedy L rear / Craig Ling Pilot/Aircraft Len Paur / Cessna 206
A.C.

Time: Start 1228 Finish 1920 Est. ~~Ground~~ Speed 80 mph Altitude 100 - 200 ft

Weather: Temperature 36°F Wind 1 Percent Cloud Cover 0

Air Calm Light Good Analyst Pat Kennedy

Jrm 3-3-76

Species	Number Adlt	Imm.	Unkn	Location Section	Town.	Range	Notes and Comments
Golden eagle			1	34	15	100W	#13 - soaring along Cathedral Bluffs at Big Duck Creek
Common raven	1			34	15	100W	#13 - along Cathedral Bluffs - ~~Sagebrush~~ at Big Duck Cr
Common raven	2			~~#~~ 35	15	100W	# 12 - perched on dead snag on Sagebrush Hill
Common raven	2			25	25	99W	# 9 - 1 perched on dead snag and flying over N. of Corral Gulch

2.3.7.4 Avifauna Raw Data

2.3.8 Reptiles and Amphibians

Reptile and amphibian data were not collected during the reporting quarter.

2.3.9 Invertebrates

Invertebrate data were not collected during the reporting quarter.

2.3.10 Domestic Livestock

2.3.10.1 Introduction

No changes have been implemented since the Second Annual Report. See Section 7.2.H.1 in the Second Annual Report for the objectives of the domestic livestock program.

2.3.10.2 Methods

No changes have been implemented since the Second Annual Report. See Section 7.2.H.2 in the Second Annual Report for the specific methods used in the domestic livestock program.

2.3.10.3 Results

Domestic livestock data were collected concurrently with large mammal data during flights on December 4 and 18, 1975; January 5 and 29, 1976; and February 23, 1976. Table 2.3-23 shows the numbers of domestic livestock observed during these surveys.

Most of the domestic livestock observed were scattered throughout the major gulches and creek bottoms east and north of Tract C-a during December. However, during the remaining surveys, most animals were observed in Ryan and Black Sulphur Gulch.

Table 2.3-23

NUMBER OF DOMESTIC LIVESTOCK OBSERVED DURING THE WINTER QUARTER (1975-76) AERIAL SURVEYS FOR RBOSP.

Date	Number Observed
December 4, 1975	301
December 18, 1975	385
January 5, 1976	262
January 29, 1976	306
February 23, 1976	137
TOTAL	1,391

2.3.10.4 Domestic Livestock Raw Data

2.3.10--Domestic Livestock

( ) No. 83 C 12.3.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83104 Date Flown 4 Dec 1975 Species Domestic Livestock Survey Area BROSP

Observers: R E. CL Kling L & PL Kennedy Pilot/Aircraft Len Paur / Cessna 206

Start 0741 Finish 1012 Avg. Indicated Air Speed 80-85 Est. Altitude 150-2

Counting Conditions: Ground Cover Fair Light Excellent Air Excellent

Weather: Temp. 38°/33° Wind E 2/5 o Cloud Cover 0/0 Analyst CLK, PLK QA Check [illegible] 1-27-

Observations M	F	JUV	U	Location (transect)		Notes and Comments
			9	1	Ryan Gulch	
			4		Ridge S of Ryan	
			1		small gully S of	
			3		N of Black Sulfur	
			1	2	east of Duckett by road	
			4		Box O Mesa midsection	
			14	3	Yellow Creek bottom	
			2		Ryan Gulch bottom	
			3		Ridge S of Ryan	
			30	4	Bottom of Ryan	
			8		Bottom of Yellow Creek	
			6		Yellow Creek head of 84 mesa	
			3	6	South of Ryan	South slope of small Ridge
			6	7	Bottom of Corral Gulch	
			75		Reagle Ranch	
			2	9	Bottom of Ryan Gulch	
			16	11	S of Duck Creek small bluff	
			6		Snake Springs Pond	
			1		S of Snake Springs Pond	P-J type
			6	13	Start of transect	
			7		N of Big Duck	
			3		Bottom of Big Duck	
			5	14	North of Big Duck	
			9		S of Little Duck	ridge tops
			3	15	Bottom of Live Eagle Gully	
			2	1	Black Sulphur Creek	along the road
			9	3	Ryan Gulch	
			9	page 1 of 11		

Total Animals Counted: 301 142

Animal Distribution: majored

RBOSP PROGRESS REPORT

File No. 83C.12.3.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

2 of 2

Proj/Study 83/04 Date Flown 4 Dec 1975 Species Domestic cattle Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Ave. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check Lum 1-27-7

Observations M (Adults)	Observations F (Ads)	Observations JUV	Observations U	Location	Notes and Comments
			2	3 north section of ridge south of Ryan Gulch	
			5	4 ridge south of Ryan Gulch	
			22	Yellow Creek	
			12	5 Yellow Creek	
			2	Wagonroad ridge	p-j/sagebrush ecotone
			1	7 Ryan Gulch	
			4	10 Galloway Gulch	
			11	Duck Creek	
			1	14 Ryan Gulch	
			1	13 Live Eagle Gully	
			2	16 Airplane Ridge	bedded down next to a shrub
			13	page total ✓	

Total Animals Counted: 301

Animal Distribution: mapped.

File No. 83C.12.3.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

1 of 2

Proj/Study 83/62 Date Flown 18 Dec 75 Species Domestic livestock Survey Area RBOSP

Observers: RF CL Kling LR J.R. Reos Pilot/Aircraft Lon Penn / Cessna 206

Start 0840 Finish 1111 Avg. Indicated Air Speed 80-85 mph Est. Altitude 150-200'

Counting Conditions: Ground Cover Excellent Light Excellent Air Excellent

Weather: Temp. 15 deg F Wind 1/0 Cloud Cover 0/0 Analyst CLK QA Check [illegible] 1-20-76

Observations M	F	JUV	U	Location (transect)	Notes and Comments
			3	1 Ryan School	
			1	Wagon Road Ridge	
				2	numerous tracks N of Duckett Ranch
			4	3 Ryan Gulch N of road	
			2	Top of Wagon Road Ridge	
			8	4 near tower	
			30	bottom of Ryan Gulch	
			8	84 mesa	
			24	6 bottom of Ryan Gulch	some on S facing slope P-J type
			11	7 N of Reagle Ranch	PJ
			11	8 W of Reagle Ranch	meadow
			3	9/10 bottom of Ryan Gulch	
			60	10 bottom of Duck Creek	
			6	11 Between Brgt Little Duck	
			12	bottom of Big Duck	
			3	Snake Springs Pond	
			16	Ryan Gulch	
			A	12 Swale Duck Creek	
			7	13 bottom of Duck Creek	
			5	Reos Gully	
			4	2 Hunk Ridge Road	
			3	3 Hunk Ridge Road	
			3	bottom of Ryan Gulch	
			3	S of Ryan Gulch	
			3	4 tower on Wagon Road	
			32	bottom of Duck Creek	
			1	6 bottom of Ryan Gulch	
			382	grand total	

Total Animals Counted: 385

Animal Distribution:

File No. _____

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 2 of 2

Proj/Study 83/62 Date Flown 18 Dec 1975 Species Domestic Livestock Survey Area RBOSP

Observers: R _____ L _____ Pilot/Aircraft _____

Start _____ Finish _____ Avg. Indicated Air Speed _____ Est. Altitude _____

Counting Conditions: Ground Cover _____ Light _____ Air _____

Weather: Temp. _____ Wind _____ Cloud Cover _____ Analyst _____ QA Check Lum 1-20

Observations M	F	JUV	U	Location Transect	Notes and Comments
			10	7	near Beagle Ranch
			6	8	bottom of Ryan Gulch
			1		above Gulch (Ryan)
			4		bottom of Corral Gulch
			40	10	end of transect
			3	11	Stake Springs
			21		Ryan Gulch
			12	12	Gulch Bottom
			4	13	Mesa above Stake Springs
			2	17	at start
			103		grand total ✓
			0		

Total Animals Counted: 385

Animal Distribution:

145

File No. 83C12.3.1

1 of 1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

J/Study 83/61 Date Flown 5 Jan 1976 Species Domestic livestock Survey Area RBOSP

Observers: R CL Kling L D Roafe Pilot/Aircraft Len Paun / Cessna 206

Start 0802 Finish 1039 Ave. Indicated Air Speed 80-85 Est. Altitude 150-200'

Counting Conditions: Ground Cover Excellent Light Fair Air Poor

Weather: Temp. 25/32 Wind SE3/1 Cloud Cover 2/3 Analyst CLK QA Check [illegible] 1-27-7

Observations M	F	JUV	U	Location	Notes and Comments
			60	Transect # 1 near Duckett Ranch	bottom land
			6	2 Ryan Gulch	bottom land
			1	3 Wagon Road Ridge after Ryan Gulch	
			2	7 Riegle Ranch	bottom
			4	8 bottom of Corral Gulch	
			65	13 Duck Creek Cow Camp	
			2	13 Duck Creek Cow. Camp	
				Transect #	
			30	2 in Ryan Gulch	bottom land
			10	3 in Ryan Gulch	near the windmill
			5	at upper end of transect	P-J
			12	4 on Yellow Creek	
			1	5 S. edge of Ryan Gulch	P J
			4	7 in Corral Gulch	bottom land
			50	near the Riegle Ranch	bottom land
			20	11 in Little Duck Creek	bottom land

Total Animals Counted: 214 ✓ 146

Animal Distribution: most concentrated in feeding areas

[illegible] PROGRESS REPORT

File No. 83C 12.5.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM

Proj/Study 83/61 Date Flown 27 Feb 76 Species Livestock Survey Area RBOSP

Observers: R F C L Kling L R P L Kennedy Pilot/Aircraft Lf. Pan / Cessna 206.

Start 0808 Finish 1040 Ave. Indicated Air Speed 80-85 Est. Altitude 150-200'

Counting Conditions: Ground Cover good to excellent Light excellent Air excellent

Weather: Temp. 26°F Wind SE 12 Cloud Cover 0/0 Analyst C L K QA Check C L K 2-27-76

Observations M	F	JUV	U	Location (Transect #)	Notes and Comments
			85	1 east of Duckett Ranch	bottomland meadow
			60	east of Duckett Ranch	bottomland meadow
			8	2 Black Saltus Creek	
			1	3 S of Ryan Gulch	
			30	4 S of Ryan Gulch	
			35	5 84 ranch	
			4	7 Corral Gulch.	
			15	Reagle Ranch	
			65	8 Ryan Gulch	
			1	11 84 mesa	
			2	12 S of Duck Creek	
			306		

Total Animals Counted: 306 ✓ 147

Animal Distribution: most in bottomlands where they are fed,

130/060175

RBOSP PROGRESS REPORT

File No. 83C12.3.1

LARGE MAMMAL AERIAL CENSUS REPORT AND DATA SUMMARY FORM 1 of 1

Proj/Study 83/02 Date Flown 23 Feb 76 Species Cattle Survey Area RBOSP

Observers: Rr CL Kling Lr PL Kennedy Pilot/Aircraft Lon Paul / Cessna 206

Start 0805 Finish 1037 Ave. Indicated Air Speed 75-85 Est. Altitude 150' agl

Counting Conditions: Ground Cover good/excellent Light good Air good

Weather: Temp. 30's Wind SW 4 Cloud Cover 0/ Analyst PLK CLK QA Check Lum 3-5-76

Observations M	F	JUV	U	Location Transect		Notes and Comments
			5	3	South of Ryan Gulch	
			57	2	Black Sulphur Creek	
			75	8	Ryan Gulch	
			137			

Total Animals Counted: 137 ✓ 148

Animal Distribution: In feeding areas.

RBOSP PROGRESS REPORT

2.3.11 Remote Sensing

2.3.11.1 Introduction

No changes have been implemented since Progress Report 4. See Section 2.3.11.1 in Progress Report-4 for the objectives of the remote sensing program.

2.3.11.2 Methods

No changes have been implemented since Progress Report 4. See Section 2.3.11.2 in Progress Report 4 for the specific methods used in the remote sensing program.

2.3.11.3 Results

Aerial photographs have been arranged in flight lines. Remote sensing analysis is under way.

2.3.12 Threatened and Endangered Species

No threatened or endangered species were recorded during the reporting quarter December 1975 through February 1976.

LITERATURE CITED

Davis, W.A. 1969. Birds in Western Colorado. Colorado Field Ornithologists. Boulder, Colorado. 61 pages.

2.4 AQUATIC ECOLOGICAL STUDIES

2.7

QUARTERLY REPORT
OCTOBER - DECEMBER 1975
FOR
RIO BLANCO OIL SHALE PROJECT
AQUATIC BASELINE STUDIES

SUBMITTED TO
CDM/LIMNETICS
DENVER, COLORADO

SUBMITTED BY
ECOLOGICAL SCIENCES DIVISION
NUS CORPORATION
PITTSBURGH, PENNSYLVANIA
HOUSTON, TEXAS
AND
DENVER, COLORADO

MARCH, 1976

PREPARED BY Thomas M. Ivory
Thomas M. Ivory
Project Manager

APPROVED BY Paul V. Morgan
Paul V. Morgan
Vice President and
General Manager
Ecological Sciences Divisio

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PREFACE

On September 9, 1974, NUS Corporation was selected by the Rio Blanco Oil Shale Project (RBOSP) and Limnetics, Incorporated to perform the Aquatic Baseline Data Accumulation Program for Federal Oil Shale Tract C-a. On October 15, 1974, the aquatic sampling program was initiated; during March 1975, NUS submitted the initial quarterly data report covering the period October 1974 - January 1975. In March, June and September NUS submitted data reports for inclusion in RBOSP Progress Reports 2, 3 and 4, respectively. This data report is being submitted to Limnetics, Incorporated for inclusion in RBOSP Progress Report 6. This report includes data from two sampling periods: October 1975 and November - December 1975. The intent of this report is to present the data accumulated and analyzed since Progress Report 5. Only limited interpretation of the data has been incorporated.

2.4 AQUATIC STUDIES

2.4.0 Introduction

2.4.0.1 Program Objectives

The Aquatic Baseline Data Accumulation Program is designed to incorporate the environmental studies described in the Federal Register, Volume 39, Number 230, Part 3, Oil Shale Lease Environmental Stipulations and in the Tract C-a Exploratory Plan of May, 1974. The overall objective for the aquatic program is to characterize the existing aquatic ecological communities in the vicinity of Tract C-a. These baseline studies will inventory the aquatic habitats which may be affected by the development of oil shale on and around Tract C-a; and will allow determination of species composition, productivity, importance to man, and relative uniqueness of aquatic habitats and species. The aquatic baseline program includes the collection and analysis of field data and an on-going survey of pertinent literature. Since most of the streams on and near Tract C-a are intermittent and since most of the permanent aquatic ecosystems occur off tract, characterization of the permanent streams will be emphasized.

2.4.0.2 Sampling Locations

The sites of the various sampling stations have been chosen to represent the broadest possible range of aquatic habitats available. A total of 35 sampling stations have been established. Because emphasis in this aquatic program has been given to the permanent streams near Tract C-a, 18 of the stations are located on the White River and Yellow Creek (near its confluence with the White River). The locations of the aquatic sampling stations are depicted in Figure 2.4-1. The description of each of these locations is presented in detail in Section 2.4.1 of the RBOSP Progress Report 2 and will not be repeated here. For convenience and ease of discussion, the sampling stations will be treated according to their geographical locations in the following manner: stations near the headwater areas west of Tract C-a (Stations 1 - 5); stations on Tract C-a (Stations 6 - 18); stations on Yellow Creek (Stations 19 - 22); and stations on the White River (Stations 23 - 35).

2.4.0.3 Schedule

The schedule of events for the RBOSP Aquatic Baseline Data Accumulation Program is presented as Table 2.4-1. The initial sampling was begun in October 1974; and sampling will continue, through August 1976. At each sampling location all physical, chemical, and biological samples are obtained on the same day. Appendix E-1-1 lists the dates on which samples were collected in October 1975, and Appendix E-1-2 lists the sampling dates for the November - December 1975 sampling period. During October 1975, samples were collected at 29 locations, and during the November - December period, at 30 locations. (The number of sites sampled varies with the number of dry sites encountered.)

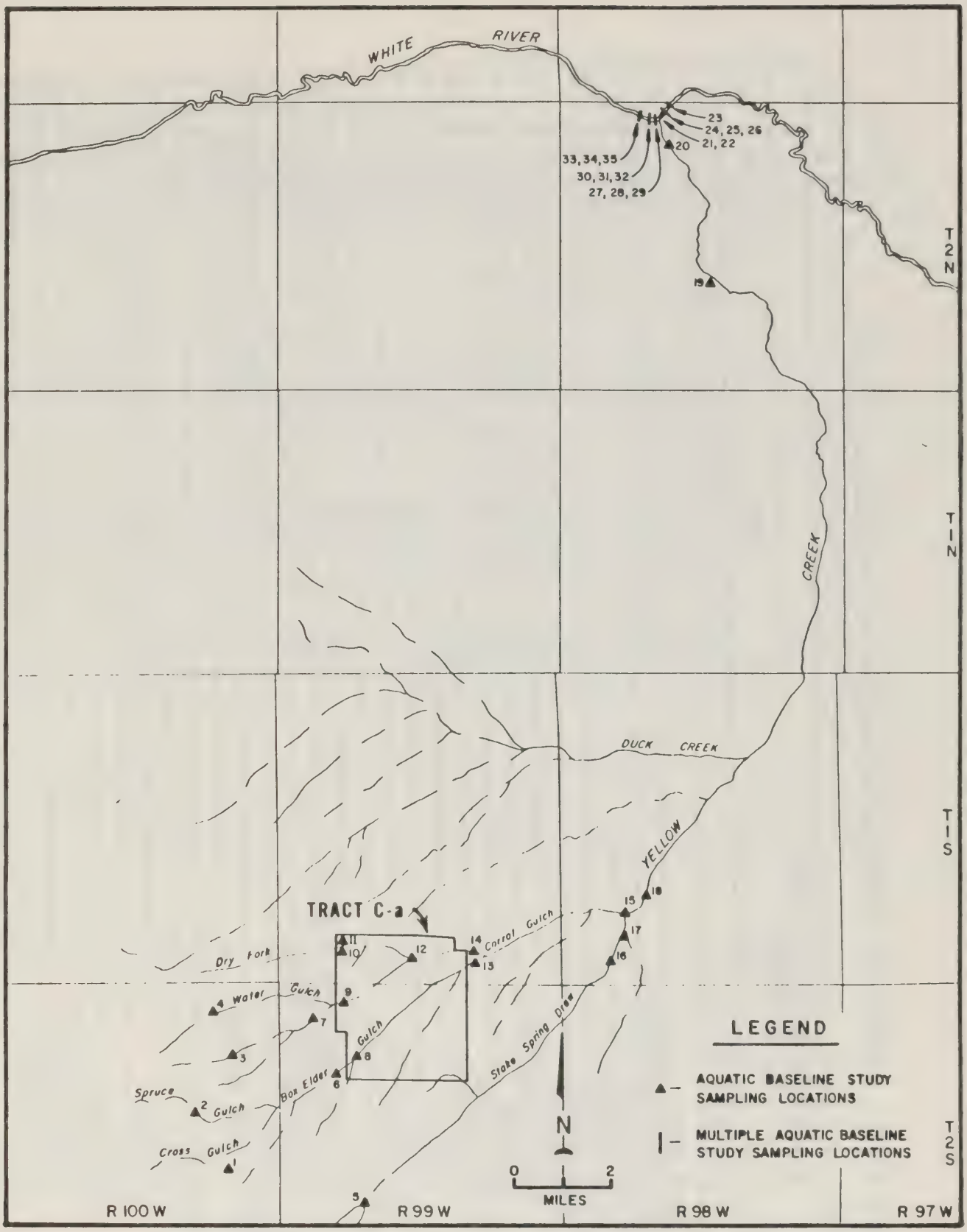

Figure 2.4-1. RBOSP Aquatic Sampling Locations

Table 2.4-1. Schedule for RBOSP Aquatic Baseline Data Accumulation Program

RIO BLANCO OIL SHALE PROJECT (GULF-STANDARD)	1975												1976											
Specification Task	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Start Date																								
Period of Performance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Start-up Time																								
Study Schedule																								
Field Studies																								
Physical	X			X	X	X		X		X		X				X		X	X		X			
Water Chemistry	X			X	X	X		X		X		X				X		X	X		X			
Plankton	X			X	X	X		X		X		X				X		X	X		X			
Periphyton	X			X	X	X		X		X		X				X		X	X		X			
Primary Prod.	X																							
Analysis					X	X		X		X						X		X	X		X			
Benthos				X	X	X		X		X		X				X		X	X		X			
Macrophytes	X			X	X	X		X		X		X				X		X	X		X			
Fish	X			X	X	X		X		X		X				X		X	X					
Rare and Endangered Species	X			X	X	X		X		X		X				X		X	X		X			
Spring and Seepages	X	X		X	X	X		X		X		X		X		X		X	X		X			
Miscellaneous Studies				X		X		X		X		X		X										
Lab Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Statistical Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Reports																								
Monthly	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quarterly			X			X			X			X			X			X						
Annual																								
Draft Final																							X	
Comment Period																								X
Incorp. Comments																								X
Final Report																								X
Meetings																								
Bimonthly		X		X		X		X		X		X		X		X		X			X			

2.4.0.4 Report Motif

The presentation of results from the two sampling periods included in this report has been limited to a preliminary description of the data; and in the case of the physical and chemical parameters, only a limited number of selected parameters are discussed. No formal data interpretations have been attempted.

2.4.1 Physical Measurements and Water Chemistry

2.4.1.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.1.1 of Progress Report 3 for specific objectives.

2.4.1.2 Methods

Water Flow

No change in methods has occurred since Progress Report 3. See section 2.4.1.2 of Progress Reports 2 and 3 for specific methods used in measuring the physical characteristics of waters under study.

Water Chemistry

No change in methods has occurred since Progress Report 3. See Table 2.4-2 of this report and section 2.4.1.2 of Progress Reports 2 and 3 for specific methods used for water chemistry analysis.

2.4.1.3 Results

During the October 1975 sampling period, a total of six sampling sites were dry; the dry sites included Stations 6, 10, 11, 15, 16 and 18. During the November - December 1975 period, Stations 6, 10 - 12 and 16 were dry or frozen.

The physical and chemical data collected during the October 1975 sampling period are presented in Appendices E-3-1 and E-5-1. Data collected during the November - December 1975 period are presented in Appendices E-4-1 and E-6-1. A summary of selected parameters for the Yellow Creek and White River stations are presented below.

Parameter	October 1975 Yellow Creek	White River
Specific conductance (μmhos)	2150 - 4000	685 - 2475
pH	8.3 - 8.7	8.0 - 8.3
Alkalinity, total ($CaCO_3$ mg/l)	759 - 1669	185 - 208
Chloride (mg/l)	35 - 129	28 - 32
Sulfate (mg/l)	162 - 311	43 - 144
Dissolved solids (mg/l)	2108 - 2634	427 - 495
Turbidity (JTU)	5 - 20	5 - 9
Dissolved oxygen (mg/l)	10.0 - 12.6	10.3 - 11.6
Temperature (^0C)	2 - 11	7 - 9

Table 2.4-2. Water and sediment chemistry, Analytical Laboratory Methodology. RBOSP Aquatic Baseline Studies.

Parameter	Measurement Methodology[1]	Detection Limit (ppm)[2]	Sample Preservation
	WATER CHEMISTRY		
Alkalinity, total	Colorimetric	2	None required
Ammonia nitrogen	Electrode	0.10	$HgCl_2$
Calcium, dissolved	Atomic absorption	0.02	None required
Chloride, dissolved	Potentiometric	0.4	None required
Hardness, total	EDTA Titration	2	None required
Magnesium, dissolved	Atomic absorption	0.005	HCl
Kjeldahl nitrogen	Kjeldahl digestion	0.10	$HgCl_2$
Nitrate, dissolved	Brucine	0.2	$HgCl_2$
Nitrite, dissolved	Diazotization	0.01	$HgCl_2$
Phosphate, ortho (dissolved)	Ammonium molybdate - potassium antimonyl tartrate	0.01	$HgCl_2$
Phosphate, total	Same as orthophosphate	0.01	$HgCl_2$
Potassium, dissolved	Atomic absorption	0.1	HCl
Silica, dissolved	Molybdosilicate	0.005	HCl
Sodium, dissolved	Atomic absorption	0.005	HCl
Sulfate, dissolved	Gravimetric	3	Refrigeration
Carbon, dissolved organic	Beckman TOC Analyzer	2	HCl
Carbon, total organic	Beckman TOC Analyzer	2	HCl
Solids, suspended	Filtration	1	None required
Solids, total dissolved	Filtration and evaporation	1	None required

[1]Methods are those specified in the Federal Register, Vol. 38, No. 199, Oct. 16, 1973, except for use of specific ion electrode.

[2]For water samples, this detection limit is the minimum concentration which will be reported on natural and treated water samples (99.99% H_2O) with the indicated method and using a sample of definite size.

Table 2.4- 2 (Continued)

Parameter	Measurement Methodology	Detection Limit (ppm)	Sample Preservation
	SEDIMENT CHEMISTRY[3]		
Arsenic	Extraction and Atomic absorption	1	Refrigeration
Aluminum	Extraction and Atomic absorption	10	Refrigeration
Herbicide	Gas Chromatography	100ppb	Refrigeration
Lead	Extraction and Atomic absorption	0.5	Refrigeration
Mercury	Extraction and Atomic absorption	0.02	Refrigeration
Nitrogen, total Kjeldahl	Kjeldahl digestion - Electrode	10	Refrigeration
Phosphate, total	Persulfate digestion	0.25	Refrigeration
Solids, total volatile	Filtration, evaporation volatilization	10	Refrigeration
Zinc	Extraction and Atomic absorption	0.5	Refrigeration

[3]Detection limits vary with sample size.

November - December 1975

Parameter	Yellow Creek	White River
Specific conductance (µmhos)	2200 - 4000	625 - 3400
pH	8.1 - 8.6	8.3 - 8.4
Alkalinity, total ($CaCO_3$ mg/l)	811 - 1811	187 - 228
Chloride (mg/l)	27 - 154	22 - 37
Sulfate (mg/l)	189 - 286	43 - 144
Dissolved solids (mg/l)	1991 - 2786	351 - 502
Turbidity (JTU)	15 - 98	3 - 26
Dissolved oxygen (mg/l)	7.4 - 9.6	12.0 - 13.8
Temperature (°C)	0 - 0	0 - 3

The summaries of selected physical and chemical data from the two sampling periods were generally consistent during the two periods and reflected conditions of the fall and early winter periods. The high extremes of conductivity in the White River occurred at Station 28 near the mouth of Yellow Creek. Other conductivity values in the White River were nearer to the minimum values presented in the preceding data summaries. The data are generally within the ranges observed during the initial year of aquatic baseline studies.

2.4.1 - Physical Measurements and Water Chemistry Data

RBOSP PROGRESS REPORT
6th

APPENDIX E-1-1

DATES OF SAMPLING FOR RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-1-1

DATES OF SAMPLING FOR
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Station	Date Sampled	Flow Condition
1	10- 2-75	Flowing
2	10- 2-75	Flowing
3	10- 7-75	Flowing
4	10- 7-75	Flowing
5	10- 8-75	Flowing
6	10- 6-75	Dry
7	10- 6-75	Flowing
8	10- 6-75	Flowing
9	10- 6-75	Flowing
10	10- 6-75	Dry
11	10- 6-75	Dry
12	10- 6-75	Flowing
13	10- 6-75	Flowing
14	10- 8-75	Flowing
15	10- 8-75	Dry
16	10- 8-75	Dry
17	10- 8-75	Flowing
18	10- 8-75	Dry
19	10- 8-75	Flowing
20	10-20-75	Flowing
21	10-20-75	Flowing
22	10-20-75	Flowing
23	10-17-75	Flowing
24	10-14-75	Flowing
25	10-14-75	Flowing
26	10-14-75	Flowing
27	10-16-75	Flowing
28	10-16-75	Flowing
29	10-16-75	Flowing
30	10-13-75	Flowing
31	10-13-75	Flowing
32	10-13-75	Flowing
33	10-15-75	Flowing
34	10-15-75	Flowing
35	10-15-75	Flowing

APPENDIX E-2-1

DATES OF SAMPLING FOR RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-2-1

DATES OF SAMPLING FOR
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975

Station	Date Sampled	Flow Condition
1	11- 6-75	Flowing
2	11-10-75	Flowing
3	11-21-75	Flowing
4	11-21-75	Flowing
5	12- 3-75	Flowing(Ice Covered)
6	12- 3-75	Dry
7	12- 3-75	Flowing(Ice Covered)
8	12- 3-75	Flowing
9	12- 3-75	Flowing
10	11-21-75	Dry
11	11-21-75	Dry
12	12- 3-75	Frozen
13	12- 1-75	Flowing
14	12- 1-75	Flowing(Ice Covered)
15	12- 1-75	Flowing(Ice Covered)
16	12- 3-75	Dry
17	12- 1-75	Flowing
18	12- 1-75	Flowing
19	11-25-75	Flowing(Ice Covered)
20	11-24-75	Flowing(Ice Covered)
21	11-24-75	Flowing(Ice Covered)
22	11-24-75	Flowing(Ice Covered)
23	11-24-75	Flowing(Slush)
24	11-17-75	Flowing
25	11-17-75	Flowing
26	11-17-75	Flowing
27	11-19-75	Flowing
28	11-19-75	Flowing
29	11-19-75	Flowing
30	11-18-75	Flowing
31	11-18-75	Flowing
32	11-18-75	Flowing
33	11-20-75	Flowing(Slush)
34	11-20-75	Flowing(Slush)
35	11-20-75	Flowing(Slush)

RBOSP PROGRESS REPORT

APPENDIX E-3-1

PHYSICAL AND CHEMICAL CHARACTERISTICS OF STREAMS
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-3-1 (Continued)

Station	Turbidity (JTU)	Color (APHA Units)	Odor	Substrate[1]	Width	Depth[2] (in.)		
						s	m	s
1	1	5-10	None	Gr,Sa	4"		1	
2	3	5-10	None	Gr,Sa	6"		2	
3	4	5-10	None	Gr,Si,D	4"		1	
4	2	5-10	None	Gr,Sa,	25"		2	
5	1	5-10	None	Gr,Sa	12"		4	
7	8	5-10	None	Gr,Sa	14"		3	
8	1	5-10	None	Gr,Sa	24"		2	
9	15	5-10	None	Gr,Sa	29"		3	
12	450	10-20	None	Gr,Sa	8"		1.5	
13	1	5-10	None	Gr,Sa	24"		3	
14	4	10-20	None	Si	36"		6	
17	125	15-25	None	Gr,Sa	6"		.5	
19	5	30-40	None	Gr,Sa	14"		5	
20	13	10-20	None	Gr,Sa	48"	1;	5	
21	20	10-20	None	Gr,Sa	39"		3	
22	11	10-20	None	Gr,Sa	38"		3	
23	5	5-10	None	Co,Gr	35'	9;	19;	6
24	5	8-15	None	Co,Gr	138'		6;	9
25	7	5-10	None	Co,Gr	138'	19;	26;	19
26	6	5-10	None	Co,Gr	138'		12;	12
27	9	5-10	None	Co,Gr	50'	10;	22;	22
28	7	5-10	None	Sa,Si	61'	10;	15;	5
29	9	5-10	None	Co,Gr	26'	9;	13;	8
30	7	5-10	None	Co,Gr	146'	8;	16;	9
31	8	5-10	None	Co,Gr	146'	9;	14;	20
32	6	5-10	None	Co,Gr	146'	20;	22;	16

[1]Co = Cobble Gr = Gravel Si = Silt
D = Detritus Sa = Sand
[2]Measurements taken at sides (s) and middle (m) of stream wherever possible.

APPENDIX E-3-1 (Continued)

Station	Water Temperature (°C)	Conductivity[2] (µmhos/cm)	Dissolved Oxygen (mg/l)	Alkalinity Total (mg/l as $CaCO_3$)	pH
		s m s			
33	7	725; 700;700	11.6	188	8.3
34	7	700; 700;700	11.5	190	8.3
35	7	700; 700;700	11.5	187	8.3

APPENDIX E-3-1 (Continued)

Station	Turbidity (JTU)	Color (APHA Units)	None	Substrate[1]	Width	Depth (in.)
						s m s
33	7	5-10	None	Co,Gr	45'	16;20;10
34	7	5-10	None	Co,Gr	10'	25; 7
35	8	5-10	None	Gr,Sa	58'	7;30;13

APPENDIX E-4-1

PHYSICAL AND CHEMICAL CHARACTERISTICS OF STREAMS
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

APPENDIX E-4-1

PHYSICAL AND CHEMICAL CHARACTERISTICS OF STREAMS
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975[1]

Station	Water Temperature (°C)	Conductivity[2] (μmhos/cm)			Dissolved Oxygen (mg/l)	Alkalinity Total (mg/l as $CaCO_3$)	pH
		s	m	s			
1	8		900		9.0	358	7.7
2	6		1050		6.2	417	7.8
3	1		1200		10.7	451	8.0
4	6		1125		9.7	460	7.8
5	0		1500		12.4	456	8.0
7	1		1150		11.4	395	8.1
8	9		1075		10.0	386	7.6
9	4		1150		10.7	387	7.9
13	7		1300		10.6	422	7.9
14	1		1900		10.0	545	7.7
15	7		1650		11.5	491	7.8
17	6		1600		8.7	488	7.6
18	6		1700		12.8	493	7.7
19	0		2200		7.4	811	8.1
20	0		4000		9.3	1811	8.5
21	0		4000		9.4	1777	8.6
22	0		4000		9.6	1770	8.5
23	0		750		13.3	201	8.4
24	3	700;	700;	700	12.7	199	8.4
25	3	700;	700;	700	12.8	194	8.4
26	3	700;	700;	700	12.5	191	8.4
27	1	725;	725;	725	13.8	187	8.4
28	1	3400;	750;	725	13.8	191	8.4
29	1	900;	800;	750	13.8	224	8.4

[1]Stations 6, 10 - 12, and 16 were dry or frozen at the time of sampling.
[2]Measurements taken at each side (s) and in the middle (m) of stream wherever possible.

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APPENDIX E-4-1 (Continued)

Station	Turbidity (JTU)	Color (APHA Units)	Odor	Substrate[1]	Width	Depth[2] (in.)		
						s	m	s
1	3	5-10	None	Gr,Sa	36"		<1	
2	6	5-10	None	Gr,Sa	6"		1	
3	0	5-10	None	Gr,Si	5"		<1	
4	13	5-10	None	Gr,Sa	36"		<2	
5	2	5-10	None	Gr,Sa	12"		8	
7	30	5-10	None	Gr,Sa	15"		2	
8	0	5-10	None	Gr,Sa	18"		<3	
9	20	5-10	None	Gr,Sa	12"		2	
13	1	5-10	None	Gr,Sa	28"		3	
14	1	8-15	None	Si	42"		6	
15	18	10-20	None	Gr,Sa	10"		<2	
17	70	10-20	None	Gr,Sa	10"		1	
18	1	10-20	None	Gr,Sa	8"		1	
19	15	10-20	None	Gr	10"		7	
20	45	10-20	None	Gr,Sa	36"		5	
21	38	5-10	None	Gr	36"		3	
22	98	5-10	None	Gr	42"		<3	
23	26	5-10	None	Co,Gr	28'	10;		18
24	10	5-10	None	Co,Gr	149'	15;	8;	8
25	10	5-10	None	Co,Gr	149'	22;	20;	15
26	13	5-10	None	Co,Gr	149'	10;	13;	22
27	13	5-10	None	Co,Gr	48'	13;	22;	9
28	11	5-10	None	Si	59'	3;	19;	5
29	20	5-10	None	Co,Gr	26'	7;	11;	6

[1]Co = Cobbles Sa = Sand
Gr = Gravel Si = Silt
[2]Measurements taken at each side (s) and in the middle (m) of stream wherever possible.

APPENDIX E-4-1 (Continued)

Station	Water Temperature (°C)	Conductivity[2] (μmhos/cm)	Dissolved Oxygen (mg/l)	Alkalinity Total (mg/l as $CaCO_3$)	pH
		s m s			
30	3	700; 700;700	12.6	194	8.4
31	3	700; 700;700	13.1	200	8.4
32	3	725; 750;800	12.9	228	8.4
33	0	700; 700	13.7	195	8.3
34	0	700; 700	13.4	211	8.3
35	0	700; 650;625	12.0	194	8.3

APPENDIX E-4-1 (Continued)

Station	Turbidity (JTU)	Color (APHA Units)	Odor	Substrate[1]	Width	Depth[2] (in.)		
						s	m	s
30	15	5-10	None	Co,Gr	145'	23;	22;	12
31	13	5-10	None	Co,Gr	145'	15;	12;	23
32	20	5-10	None	Co,Gr	145'	12;	15;	15
33	18	5-10	None	Co,Gr	43'	10;		20
34	10	5-10	None	Gr	15'	20;		7
35	10	5-10	None	Co,Gr	53'	7;	27	

RBOSP PROGRESS REPORT

APPENDIX E-5-1

WATER CHEMISTRY DATA
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-5-1

WATER CHEMISTRY DATA
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975
(Data are expressed in mg/l unless otherwise noted.)[1,2]

STATION REPLICATE	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR
1-A	<0.1	83	10	9	4	5-10
1-B	<0.1	83	10	8	4	5-10
2-A	<0.1	80	9	11	5	5-10
2-B	<0.1	80	9	10	5	5-10
3-A	<0.1	82	8	10	10	5-10
3-B	<0.1	83	6	8	10	5-10
4-A	<0.1	102	8	8	6	5-10
4-B						
5-A	<0.1	89	6	14	13	5-10
5-B	<0.1	91	7	10	14	5-10
7-A	<0.1	79	7	9	7	5-10
7-B	<0.1	81	9	8	7	5-10
8-A	<0.1	79	7	7	10	5-10
8-B	<0.1	80	7	9	10	5-10
9-A	<0.1	80	7	7	7	5-10
9-B						
12-A	<0.1	66	10	25	8	10-20
12-B	<0.1	66	9	21	8	10-20
13-A	<0.1	76	2	6	9	5-10
13-B	<0.1	76	5	6	9	5-10
14-A	<0.1	88	9	12	18	10-20
14-B	<0.1	89	10	11	19	10-20

[1] Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling.

[2] Data for color are APHA units, all other data are expressed in mg/l.

APPENDIX E-5-1 (Continued)

STATION REPLICATE	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR
17-A	<0.1	107	15	26	23	10-20
17-B	<0.1	104	13	20	23	20-30
19-A	<0.1	52	19	20	35	30-40
19-B	<0.1	52	19	18	35	30-40
20-A	<0.1	27	28	31	121	10-20
20-B	<0.1	27	8	28	120	10-20
21-A	<0.1	30	31	40	122	10-20
21-B	<0.1	30	31	39	129	10-20
22-A	<0.1	30	16	33	106	10-20
22-B	<0.1	27	14	22	123	10-20
23-A	<0.1	68	4	6	28	5-10
23-B	<0.1	69	4	5	28	5-10
24-A	<0.1	70	4	5	30	10-20
24-B	<0.1	71	5	3	30	5-10
25-A	<0.1	69	3	< 1	30	5-10
25-B	<0.1	69	< 1	< 1	31	5-10
26-A	<0.1	69	6	5	30	5-10
26-B	<0.1	70	5	5	30	5-10
27-A	<0.1	66	3	9	28	
27-B	<0.1	67	4	4	28	5-10
28-A	<0.1	64	4	4	28	5-10
28-B	<0.1	64	3	4	28	5-10
29-A	<0.1	68	3	4	30	5-10
29-B	<0.1	64	4	5	28	5-10
30-A	<0.1	66	3	3	30	5-10
30-B	<0.1	68	3	5	30	5-10
31-A	<0.1	66	3	6	31	5-10
31-B	<0.1	66	3	5	31	5-10

APPENDIX E-5-1 (Continued)

STATION REPLICATE	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR
32-A	<0.1	66	4	4	31	5-10
32-B	<0.1	64	3	5	32	5-10
33-A	<0.1	64	2	3	28	5-10
33-B	<0.1	66	3	5	29	5-10
34-A	<0.1	67	1	<1	29	5-10
34-B	<0.1	67	<1	<1	29	5-10
35-A	<0.1	66	3	5	28	5-10
35-B	<0.1	64	3	5	28	5-10

APPENDIX E-5-1 (Continued)

STATION REPLICATE	PARAMETER							
	HARDNESS ($CaCO_3$)	MAGNESIUM (Mg)	NITRATE (N)	NITRITE (N)	KJELDAHL NITROGEN (N)	ODOR[3]	ORTHO-PHOSPHATE (P)	TOTAL PHOSPHATE (P)
1-A	379	42	0.6	<0.01	0.19	ND	0.01	0.02
1-B	359	42	0.6	<0.01	0.16	ND	<0.01	0.02
2-A	381	43	<0.2	<0.01	0.22	ND	<0.01	0.06
2-B	390	43	<0.2	<0.01	0.19	ND	<0.01	0.06
3-A	473	58	<0.2	<0.01	0.35	ND	0.01	0.06
3-B	469	59	<0.2	<0.01	0.44	ND	0.01	0.06
4-A	526	63	<0.2	<0.01	0.22	ND	0.02	0.05
4-B								
5-A	569	85	<0.2	<0.01	0.19	ND	<0.01	<0.01
5-B	569	86	<0.2	<0.01	0.22	ND	<0.01	<0.01
7-A	441	59	0.6	<0.01	0.27	ND	<0.01	0.03
7-B	443	61	0.5	<0.01	0.30	ND	<0.01	0.03
8-A	426	52	<0.2	<0.01	0.26	ND	0.03	0.03
8-B	422	52	0.5	<0.01	0.26	ND	0.02	0.03
9-A	439	61	0.5	<0.01	0.49	ND	<0.01	0.03
9-B								
12-A	437	63	0.8	<0.01	1.9	ND	0.02	1.4
12-B	432	63	0.7	<0.01	2.1	ND	0.01	1.3
13-A	460	63	<0.2	<0.01	0.19	ND	0.03	0.04
13-B	454	63	<0.2	<0.01	0.22	ND	0.03	0.04
14-A	656	102	0.4	0.01	0.62	ND	<0.01	0.05
14-B	652	108	0.5	0.01	0.62	ND	<0.01	0.03
17-A	690	120	<0.2	<0.01	0.62	ND	<0.01	0.68
17-B	690	120	<0.2	<0.01	0.55	ND	<0.01	0.69
19-A	716	170	<0.2	<0.01	0.35	ND	0.01	0.05
19-B	711	180	<0.2	<0.01	0.46	ND	0.01	0.04
20-A	490	108	0.5	<0.01	0.40	ND	<0.01	0.04
20-B	500	108	0.4	<0.01	0.44	ND	<0.01	0.04
21-A	525	113	0.2	<0.01	0.44	ND	<0.01	0.05
21-B	516	114	0.3	<0.01	0.42	ND	<0.01	0.04

[3] ND = Not Detected

APPENDIX E-5-1 (Continued)

STATION REPLICATE	PARAMETER							
	HARDNESS ($CaCO_3$)	MAGNESIUM (Mg)	NITRATE (N)	NITRITE (N)	KJELDAHL NITROGEN (N)	ODOR	ORTHO-PHOSPHATE (P)	TOTAL PHOSPHATE (P)
22-A	543	115	0.3	<0.01	0.44	ND	<0.01	0.03
22-B	551	114	0.7	<0.01	0.49	ND	<0.01	0.04
23-A	256	22	<0.2	<0.01	0.19	ND	<0.01	0.03
23-B	267	22	<0.2	<0.01	0.20	ND	<0.01	0.03
24-A	265	22	<0.2	<0.01	0.20	ND	<0.01	0.03
24-B	263	22	<0.2	<0.01	0.20	ND	<0.01	0.03
25-A	261	22	<0.2	<0.01	0.25	ND	<0.01	0.03
25-B	261	22	<0.2	<0.01	0.21	ND	<0.01	0.03
26-A	265	22	<0.2	<0.01	0.24	ND	0.01	0.03
26-B	260	23	<0.2	<0.01	0.24	ND	<0.01	0.03
27-A	227	20	<0.2	<0.01	0.19	ND	<0.01	0.02
27-B	258	21	<0.2	<0.01	0.19	ND	<0.01	0.02
28-A	256	23	<0.2	<0.01	0.10	ND	<0.01	0.02
28-B	260	23	<0.2	<0.01	0.16	ND	<0.01	0.02
29-A	252	24	<0.2	<0.01	0.16	ND	<0.01	0.03
29-B	265	24	<0.2	<0.01	0.16	ND	<0.01	0.03
30-A	261	24	<0.2	<0.01	0.20	ND	<0.01	0.02
30-B	264	24	<0.2	<0.01	0.16	ND	<0.01	0.03
31-A	265	24	<0.2	<0.01	0.16	ND	<0.01	0.02
31-B	265	25	<0.2	<0.01	0.26	ND	<0.01	0.02
32-A	261	27	<0.2	<0.01	0.24	ND	<0.01	0.03
32-B	264	28	<0.2	<0.01	0.21	ND	0.01	0.03
33-A	247	23	<0.2	<0.01	0.18	ND	<0.01	0.02
33-B	260	24	<0.2	<0.01	0.15	ND	<0.01	0.02
34-A	256	21	<0.2	<0.01	0.16	ND	<0.01	0.04
34-B	260	21	<0.2	<0.01	0.15	ND	<0.01	0.02
35-A	248	25	<0.2	<0.01	0.16	ND	<0.01	0.02
35-B	259	24	<0.2	<0.01	0.16	ND	<0.01	0.02

APPENDIX E-5-1 (Continued)

STATION REPLICATE	PARAMETER						
	POTASSIUM (K)	SOLUBLE SILICA (Si)	SODIUM (Na)	DISSOLVED SOLIDS	SUSPENDED SOLIDS	SULFATE (S)	TURBIDITY (JTU)
1-A	1.1	10.0	45	484	9	39	1
1-B	1.1	10.0	46	532	3	41	1
2-A	1.1	10.0	77	591	15	49	2
2-B	1.1	11.0	77	590	18	50	3
3-A	3.0	8.6	110	810	32	97	2
3-B	3.2	8.7	115	789	17	102	5
4-A	1.6	10.0	87	739	6	85	2
4-B							
5-A	4.8	5.4	132	980	23	132	1
5-B	4.9	5.8	136	950	11	138	1
7-A	1.8	9.4	86	711	45	86	7
7-B	1.8	9.8	90	738	38	76	8
8-A	1.7	9.7	78	640	6	64	1
8-B	1.7	9.6	73	661	5	66	1
9-A	1.9	9.7	89	730	65	86	15
9-B							
12-A	3.8	10.0	95	759	1112	91	450
12-B	3.8	10.0	96	767	1128	94	450
13-A	2.1	9.8	118	786	7	88	1
13-B	2.2	9.7	122	808	5	92	1
14-A	4.7	8.3	180	1283	9	171	3
14-B	4.7	8.4	180	1248	11	175	4
17-A	6.8	7.8	190	1466	742	203	125
17-B	7.3	7.3	194	1477	579	209	125
19-A	9.7	6.3	400	2108	6	311	4
19-B	9.8	6.3	400	2113	5	295	5
20-A	6.4	2.6	760	2376	33	168	15
20-B	6.4	2.6	760	2374	29	162	10
21-A	6.5	2.3	800	2508	49	169	25
21-B	6.5	2.3	860	2500	35	168	15

APPENDIX E-5-1 (Continued)

STATION REPLICATE	PARAMETER						
	POTASSIUM (K)	SOLUBLE SILICA (Si)	SODIUM (Na)	DISSOLVED SOLIDS	SUSPENDED SOLIDS	SULFATE (S)	TURBIDITY (JTU)
22-A	6.3	1.4	850	2588	24	178	7
22-B	6.1	1.4	815	2634	28	168	15
23-A	2.0	6.4	48	445	13	48	5
23-B	2.0	6.3	49	445	52	46	4
24-A	2.3	6.4	52	441	15	48	5
24-B	2.1	6.4	50	491	17	48	4
25-A	2.4	6.4	48	439	21	144	7
25-B	2.4	6.6	49	441	20	141	6
26-A	2.0	6.2	49	463	19	47	6
26-B	2.0	6.4	49	471	18	47	5
27-A	1.9	6.6	47	410	36	43	15
27-B	1.9	6.8	48	486	14	45	2
28-A	1.9	6.7	46	439	17	45	7
28-B	2.0	6.9	49	448	14	44	7
29-A	2.0	6.8	53	452	44	46	8
29-B	2.0	6.7	51	483	25	46	9
30-A	2.1	6.1	50	453	19	47	6
30-B	2.1	6.1	50	461	19	48	7
31-A	2.1	5.9	52	479	22	48	8
31-B	2.0	6.2	52	483	32	48	8
32-A	2.2	6.0	61	491	21	48	6
32-B	2.2	6.3	63	495	22	51	5
33-A	1.9	7.0	46	448	25	45	9
33-B	2.0	6.8	49	470	12	6	5
34-A	2.2	6.8	49	429	17	138	7
34-B	2.2	6.9	48	427	18	138	6
35-A	2.0	6.9	48	455	21	46	9
35-B	2.0	6.9	49	456	14	46	6

RBOSP PROGRESS REPORT

APPENDIX E-6-1

WATER CHEMISTRY DATA
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

APPENDIX E-6-1

WATER CHEMISTRY DATA
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975
(Data are expressed in mg/l unless otherwise noted)[1,2]

Station Replicate	Ammonia (N)	Calcium (Ca)	Organic Carbon(C) Dissolved	Total Organic Carbon(C)	Chloride (Cl)	Color
1-A	<0.1	94	6	7	6	5-10
1-B	<0.1	98	9	10	4	5-10
2-A	<0.1	88	7	7	6	5-10
2-B	<0.1	88	7	7	5	5-10
3-A	<0.1	105	2	5	12	5-10
3-B	<0.1	106	1	5	12	5-10
4-A	<0.1	107	6	< 1	9	5-10
4-B	<0.1	107	7	7	8	5-10
5-A	<0.1	111	11	11	12	5-10
5-B	<0.1	112	5	11	12	5-10
7-A	<0.1	93	8	< 1	8	5-10
7-B	<0.1	94	8	2	8	5-10
8-A	<0.1	82	10	10	12	5-10
8-B	<0.1	85	10	6	11	5-10
9-A	<0.1	90	8	10	8	5-10
9-B	<0.1	91	10	4	8	5-10
13-A	<0.1	83	< 1	< 1	11	5-10
13-B	<0.1	83	< 1	< 1	11	5-10
14-A	<0.1	111	10	14	18	5-10
14-B	<0.1	110	16	14	17	10-20

[1]Stations 6, 10 - 12, and 16 were dry at the time of sampling.
[2]Data for color are APHA units.

APPENDIX E-6-1 (Continued)

Station Replicate	Ammonia (N)	Calcium (Ca)	Organic Carbon(C) Dissolved	Total Organic Carbon(C)	Chloride (Cl)	Color
15-A	<0.1	108	11	16	21	10-20
15-B	<0.1	108	9	19	20	10-20
17-A	<0.1	107	12	16	20	10-20
17-B	<0.1	110	14	14	18	10-20
18-A	<0.1	108	12	12	19	10-20
18-B	<0.1	107	14	12	19	10-20
19-A	<0.1	64	20	26	27	10-20
19-B	<0.1	63	15	13	27	10-20
20-A	<0.1	35	16	16	151	10-20
20-B	<0.1	35	16	26	153	10-20
21-A	<0.1	33	16	16	151	5-10
21-B	<0.1	34	26	16	153	5-10
22-A	<0.1	33	10	16	154	5-10
22-B	<0.1	34	16	26	154	5-10
23-A	<0.1	71	2	2	22	5-10
23-B	<0.1	71	1	3	37	5-10
24-A	<0.1	67	4	5	31	5-10
24-B	<0.1	66	3	3	31	5-10
25-A	<0.1	69	3	< 1	30	5-10
25-B	<0.1	69	< 1	< 1	31	5-10
26-A	<0.1	66	3	4	33	5-10
26-B	<0.1	67	3	5	31	5-10
27-A	<0.1	66	3	3	33	5-10
27-B	<0.1	68	3	2	31	5-10
28-A	<0.1	66	5	5	35	5-10
28-B	<0.1	68	5	5	34	5-10
29-A	<0.1	65	3	4	36	5-10
29-B	<0.1	65	4	2	33	5-10
30-A	<0.1	66	3	2	31	5-10
30-B	<0.1	67	2	2	31	5-10

APPENDIX E-6-1 (Continued)

Station Replicate	Ammonia (N)	Calcium (Ca)	Organic Carbon(C) Dissolved	Total Orbanic Carbon(C)	Chloride (Cl)	Color
31-A	<0.1	66	4	4	32	5-10
31-B	<0.1	66	2	3	31	5-10
32-A	<0.1	66	5	4	35	5-10
32-B	<0.1	65	2	4	35	5-10
33-A	<0.1	68	4	4	34	5-10
33-B	<0.1	66	1	3	34	5-10
34-A	<0.1	67	1	< 1	29	5-10
34-B	<0.1	67	< 1	< 1	29	5-10
35-A	<0.1	66	5	4	34	5-10
35-B	<0.1	66	3	4	34	5-10

APPENDIX E-6-1 (Continued)

Station Replicate	Hardness ($CaCO_3$)	Magnesium (Mg)	Nitrate (N)	Nitrite (N)	Kjeldahl Nitrogen (N)	Odor[3]	Ortho-Phosphate (P)	Total Phosphate (P)
1-A	414	44	0.4	<0.01	0.32	ND	<0.01	0.03
1-B	412	46	0.4	<0.01	0.29	ND	<0.01	0.02
2-A	406	46	<0.2	<0.01	0.27	ND	<0.01	0.04
2-B	412	46	<0.2	<0.01	0.27	ND	<0.01	0.06
3-A	535	65	<0.2	<0.01	<0.10	ND	0.02	0.02
3-B	535	65	<0.2	<0.01	<0.10	ND	0.02	0.02
4-A	279	60	1.4	<0.01	0.23	ND	0.02	0.02
4-B	515	62	1.1	<0.01	0.27	ND	0.02	0.02
5-A	609	82	1.1	0.01	0.36	ND	<0.01	0.02
5-B	609	78	0.8	0.01	0.39	ND	0.01	0.03
7-A	452	60	0.9	<0.01	1.50	ND	<0.01	0.08
7-B	452	60	0.8	<0.01	0.40	ND	<0.01	0.05
8-A	431	53	0.6	<0.01	0.16	ND	0.02	0.03
8-B	456	56	0.5	<0.01	0.14	ND	0.02	0.03
9-A	452	58	0.5	<0.01	0.30	ND	0.01	0.03
9-B	452	61	0.5	<0.01	0.28	ND	0.01	0.06
13-A	474	65	<0.2	<0.01	0.13	ND	0.03	0.04
13-B	479	66	<0.2	<0.01	0.12	ND	0.03	0.03
14-A	716	107	1.3	0.01	0.33	ND	<0.01	0.01
14-B	714	106	1.3	0.01	0.19	ND	<0.01	<0.01

[3]ND = Not detectable

APPENDIX E-6-1 (Continued)

Station Replicate	Hardness ($CaCO_3$)	Magnesium (Mg)	Nitrate (N)	Nitrite (N)	Kjeldahl Nitrogen (N)	Odor	Ortho-Phosphate (P)	Total Phosphate (P)
15-A	721	113	<0.2	<0.01	0.20	ND	0.02	0.35
15-B	722	112	<0.2	<0.01	0.40	ND	0.03	0.12
17-A	714	110	<0.2	<0.01	0.63	ND	0.03	0.20
17-B	724	111	<0.2	<0.01	0.63	ND	0.03	0.22
18-A	709	110	<0.2	<0.01	0.30	ND	0.02	0.03
18-B	716	110	<0.2	<0.01	0.33	ND	0.03	0.05
19-A	916	184	<0.2	<0.01	0.31	ND	0.04	0.05
19-B	916	182	<0.2	<0.01	0.31	ND	0.04	0.06
20-A	571	128	1.6	0.01	0.59	ND	<0.01	0.02
20-B	575	130	1.4	<0.01	0.65	ND	<0.01	0.01
21-A	566	130	1.5	<0.01	0.65	ND	<0.01	0.05
21-B	570	131	1.5	<0.01	0.62	ND	<0.01	0.05
22-A	575	123	1.2	<0.01	0.94	ND	<0.01	0.03
22-B	584	128	1.4	<0.01	1.00	ND	<0.01	0.07
23-A	214	24	<0.2	<0.01	0.17	ND	0.01	0.11
23-B	273	23	<0.2	<0.01	0.12	ND	0.01	0.09
24-A	272	22	<0.2	<0.01	0.15	ND	<0.01	0.01
24-B	267	22	<0.2	<0.01	0.17	ND	<0.01	0.04
25-A	261	22	<0.2	<0.01	0.25	ND	<0.01	0.03
25-B	261	22	<0.2	<0.01	0.21	ND	<0.01	0.03
26-A	262	22	<0.2	<0.01	0.18	ND	<0.01	0.15
26-B	257	21	<0.2	<0.01	0.18	ND	<0.01	0.04
27-A	256	23	<0.2	<0.01	0.19	ND	<0.01	0.06
27-B	253	22	<0.2	<0.01	0.18	ND	<0.01	0.03
28-A	256	22	<0.2	<0.01	0.18	ND	<0.01	0.03
28-B	249	21	<0.2	<0.01	0.18	ND	<0.01	0.03
29-A	253	24	<0.2	<0.01	0.23	ND	<0.01	0.03
29-B	254	24	<0.2	<0.01	0.27	ND	<0.01	0.03
30-A	262	24	<0.2	<0.01	0.23	ND	<0.01	0.02
30-B	259	23	<0.2	<0.01	0.19	ND	<0.01	0.03

APPENDIX E-6-1 (Continued)

Station Replicate	Hardness ($CaCO_3$)	Magnesium (Mg)	Nitrate (N)	Nitrite (N)	Kjeldahl Nitrogen (N)	Odor	Ortho-Phosphate (P)	Total Phosphate (P)
31-A	256	23	<0.2	<0.01	0.23	ND	<0.01	0.03
31-B	254	23	<0.2	<0.01	0.22	ND	<0.01	0.02
32-A	256	25	<0.2	<0.01	0.10	ND	<0.01	0.02
32-B	263	26	<0.2	<0.01	0.18	ND	<0.01	0.07
33-A	264	24	<0.2	<0.01	0.17	ND	<0.01	0.05
33-B	256	25	<0.2	<0.01	0.18	ND	<0.01	0.09
34-A	256	21	<0.2	<0.01	0.16	ND	<0.01	0.04
34-B	260	21	<0.2	<0.01	0.15	ND	<0.01	0.02
35-A	211	23	<0.2	<0.01	0.10	ND	<0.01	0.09
35-B	262	23	<0.2	<0.01	0.19	ND	<0.01	0.05

APPENDIX E-6-1 (Continued)

Station Replicate	Potassium (K)	Soluble Silica (Si)	Sodium (Na)	Dissolved Solids	Suspended Solids	Sulfate (S)	Turbidity (JTU)
1-A	1.2	10.0	46	581	< 1	38	2
1-B	1.2	11.0	48	567	1	43	3
2-A	1.2	11.0	71	652	11	54	5
2-B	1.2	11.0	71	648	9	53	6
3-A	2.0	9.7	113	888	< 1	105	0
3-B	2.0	9.7	113	888	< 1	106	0
4-A	1.7	10.1	86	419	121	86	25
4-B	1.7	10.2	86	809	7	88	1
5-A	3.1	8.0	127	1030	7	131	2
5-B	3.1	8.0	128	1019	6	132	2
7-A	1.7	8.5	90	740	47	88	15
7-B	1.7	10.2	88	729	255	87	45
8-A	1.8	9.7	82	676	< 1	70	0
8-B	1.8	9.7	79	671	< 1	68	0
9-A	1.9	9.8	90	741	59	88	20
9-B	1.9	9.7	89	741	62	88	20
13-A	2.3	9.7	121	813	8	96	2
13-B	2.3	9.8	121	831	1	95	0
14-A	3.7	9.4	175	1254	1	170	1
14-B	3.8	9.2	175	1250	3	168	1

2.4.2 Phytoplankton

2.4.2.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.2.1 of Progress Report 3 for specific objectives.

2.4.2.2 Methods

No change in methods has occurred since Progress Report 2. See section 2.4.2.2 of Progress Report 2 for specific methods used in phytoplankton studies.

2.4.2.3 Results

Algal taxa observed in the October 1975 phytoplankton collections are listed in Appendix E-7-1. A total of 115 taxa were observed in these samples. Quantitative data from October 1975 are presented in Appendix E-7-2.

During the October 1975 sampling, the most abundant phytoplankton at the headwater stations included the diatoms Achnanthes minutissima and Navicula cryptocephala and unidentified flagellated and non-flagellated chlorophytes.

At Tract Stations 7, 8, 9, 12, and 13, the most abundant taxa generally belonged to the Chrysophyta and they included Achnanthes minutissima, Achnanthes lanceolata, Chrysidiastrum ocellatum, Navicula cryptocephala, Navicula gregaria, Navicula pelliculosa, Nitzschia capitata, Nitzschia denticula, Nitzschia dissipata, Nitzschia frustulum, and Nitzschia palea. At Station 14, the most abundant taxa were the cryptophyte Cryptomonas erosa and the diatoms Synedra miniscula, Cyclotella meneghiniana, Synedra fomalica, and Synedra amphicephala. At Station 17, phytoplankton was particularly abundant. The most abundant taxa included the diatoms Navicula cryptocephala and Nitzschia frustulum, the cryptophyte Cryptomonas erosa, and unidentified taxa belonging to the Chlorophyta and Cyanophyta. In Yellow Creek, the most abundant taxa at Station 19 were Cryptomonas erosa, Nitzschia acicularis and an unidentified flagellated chlorophyte, whereas, at Stations 20 - 22, the most abundant taxa were primarily the diatoms Cyclotella meneghiniana, Achnanthes minutissima, Nitzschia holsatica, Nitzschia palea, and Thalassiosira fluviatilis. In the White River, the dominant taxa included the diatoms Epithemia sorex, Diatoma vulgare, Navicula cryptocephala, Navicula salinarum var. intermedia, Gomphonema ventricosum, and Nitzschia frustulum and unidentified flagellated and non-flagellated chlorophyte species. During the October 1975 sampling, phytoplankton abundance was lower in the White River than in any of the other geographical areas of study.

During the November - December 1975 sampling period, the most abundant algal taxa in the phytoplankton at the headwater stations included the diatoms Achnanthes minutissima and Navicula pelliculosa. At the tract stations, the dominant taxa were the diatoms Achnanthes minutissima, Navicula cryptocephala, Synedra amphicephala, Nitzschia acicularis, and Nitzschia frustulum, and an unidentified chlorophyte. In Yellow Creek, the diatoms Nitzschia holsatica and Cyclotella meneghiniana were the dominant phytoplankton taxa, whereas Navicula viridula, Diatoma vulgare, and an unidentified chlorophyte were dominant in the White River.

2.4.2 - Phytoplankton Data

RBOSP PROGRESS REPORT

APPENDIX E-7-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-7-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

CYANOPHYTA

Cyanophyta I
Chroococcus dispersus
Merismopedia glauca
Oscillatoria tenuis
Oscillatoria spp.
Schizothrix calcicola
Anabaena flos-aquaf
Anabaena spp.
Calothrix spp.

CHLOROPHYTA

Chlamydomonas globosa
Ulothrix spp.
Stigeoclonium spp.
Ankistrudesmus falcatus
Scenedesmus bijuga
Scenedesmus quadricauda
Actinastrum hantzschii
Mougeotia spp.
Spirogyra spp.
Zygnema spp.
Closterium acutum
Closterium leibleinii
Chlorophyta I

CHRYSOPHYTA

Bicoeca lacustris
Chrysidiastrum ocellatum
Thalassiosira fluviatilis
Cyclotella meneghiniana
Stephanodiscus astraea
Diatoma tenue
Diatoma vulgare
Meridion circulare
Fragilaria capucina
Fragilaria construens
Fragilaria crotonensis
Fragilaria leptostauron
Fragilaria pinnata

APPENDIX E-7-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

CYANOPHYTA

Cyanophyta I
Chroococcus dispersus
Merismopedia glauca
Oscillatoria tenuis
Oscillatoria spp.
Schizothrix calcicola
Anabaena flos-aquaf
Anabaena spp.
Calothrix spp.

CHLOROPHYTA

Chlamydomonas globosa
Ulothrix spp.
Stigeoclonium spp.
Ankistrudesmus falcatus
Scenedesmus bijuga
Scenedesmus quadricauda
Actinastrum hantzschii
Mougeotia spp.
Spirogyra spp.
Zygnema spp.
Closterium acutum
Closterium leibleinii
Chlorophyta I

CHRYSOPHYTA

Bicoeca lacustris
Chrysidiastrum ocellatum
Thalassiosira fluviatilis
Cyclotella meneghiniana
Stephanodiscus astraea
Diatoma tenue
Diatoma vulgare
Meridion circulare
Fragilaria capucina
Fragilaria construens
Fragilaria crotonensis
Fragilaria leptostauron
Fragilaria pinnata

Fragilaria vaucheriae
Fragilaria spp.
Synedra amphicephala
Synedra famelica
Synedra minuscula
Synedra pulchella
Synedra ulna
Cocconeis pediculus
Achnanthes lanceolata
Achnanthes minutissima
Rhoicosphenia curvata
Gyrosigma acuminatum
Pleurosigma delicatulum
Anomoeoneis sphaerophora
Medium affine
Diploneis elliptica
Diploneis oblongella
Navicula arvensis
Navicula cryptocephala
Navicula cuspidata
Navicula gregaria
Navicula lanceolata
Navicula mutica
Navicula oblonga
Navicula pelliculosa
Navicula pupula
Navicula salinarum
Navicula salinarum var. intermedia
Navicula tripunctata
Navicula viridula
Navicula sp. 1
Navicula sp. 2
Navicula sp. 5
Caloneis amphisbaena
Caloneis bacillum
Pinnularia brebissonii
Pinnularia viridis
Amphora ovalis
Amphora ovalis var. pediculus
Cymbella affinis
Cymbella mexicana
Cymbella microcephala
Cymbella pusilla
Cymbella sinuata
Cymbella tumida
Cymbella ventricosa
Gomphonema intricatum

Gomphonema lanceolatum
Gomphonema olivaceum
Gomphonema parvulum
Gomphonema ventricosum
Amphiprora alata
Epithemia sorex
Epithemia zebra
Rhopalodia gibba
Cylindrotheca gracilis
Nitzschia acicularis
Nitzschia apiculata
Nitzschia capitellata
Nitzschia denticula
Nitzschia dissipata
Nitzschia fonticola
Nitzschia frustulum
Nitzschia gracilis
Nitzschia holsatica
Nitzschia hungarica
Nitzschia ignorata
Nitzschia latens
Nitzschia linearis
Nitzschia palea
Nitzschia vermicularis
Cymatopleura elliptica
Cymatopleura solea
Surirella ovata
Surirella ovalis

EUGLENOPHYTA

Euglena proxima
Euglena spp.
Trachelomonas hispida

CRYPTOPHYTA

Cryptomonas erosa

MICROFLAGELLATES

Flagellate (unidentified)

RBOSP PROGRESS REPORT

APPENDIX E-7-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-7-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

SITE = 01

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
SCHIZOTHRIX CALCICOLA	19.00	
CHLOROPHYTA		
CHLOROPHYTA I	54.00	40.00
CHRYSOPHYTA		
BICOECA LACUSTRIS		22.00
CHRYSIDIASTRUM OCELLATUM	532.00	354.00
SYNEDRA AMPHICEPHALA	5.00	11.00
ACHNANTHES LANCEOLATA	3.00	8.00
ACHNANTHES MINUTISSIMA	122.00	111.00
GYROSIGMA ACUMINATUM	8.00	3.00
NAVICULA ARVENSIS	14.00	27.00
NAVICULA CRYPTOCEPHALA	51.00	49.00
NAVICULA PELLICULOSA	11.00	11.00
NAVICULA SALINARUM VAR. INTERMEDIA	8.00	
CALONEIS AMPHISBAENA		.02
PINNULARIA BREBISSONII	.06	3.00

2.4.2.613

APPENDIX E-7-2 (Continued)

SITE = 01

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
AMPHORA OVALIS	3.00	
CYMBELLA AFFINIS		3.00
CYMBELLA TUMIDA	3.00	
CYMBELLA VENTRICOSA		5.00
GOMPHONEMA INTRICATUM	3.00	
GOMPHONEMA OLIVACEUM	3.00	8.00
CYLINDROTHECA GRACILIS		3.00
NITZSCHIA ACICULARIS	46.00	46.00
NITZSCHIA FRUSTULUM	8.00	8.00
NITZSCHIA LINEARIS	57.00	54.00
NITZSCHIA PALEA	24.00	11.00
SURIRELLA OVALIS	8.00	3.00
EUGLENOPHYTA		
EUGLENA PROXIMA		.06
CRYPTOPHYTA		
CRYPTOMONAS EROSA	5.00	5.00

APPENDIX E-7-2 (Continued)

SITE = 01

TAXON	REP A	REP B
	(CELLS/ML)	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	84.00	113.00

APPENDIX E-7-2 (Continued)

SITE = 02

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	10.00	
SCHIZOTHRIX CALCICOLA		3.00
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	3.00	
ULOTHRIX SPP	1.64	
SCENEDESMUS QUADRICAUDA		5.00
CHLOROPHYTA 1	53.00	29.00
CHRYSOPHYTA		
BICOECA LACUSTRIS	5.00	
SYNEDRA AMPHICEPHALA	23.00	40.00
SYNEDRA ULNA	2.00	
COCCONEIS PEDICULUS		2.00
ACHNANTHES LANCEOLATA	7.00	8.00
ACHNANTHES MINUTISSIMA	27.00	42.00
GYROSIGMA ACUMINATUM		2.00
NAVICULA CRYPTOCEPHALA	15.00	15.00

APPENDIX E-7-2 (Continued)

SITE = 02

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA PELLICULOSA	2.00	2.00
NAVICULA SALINARUM	2.00	
PINNULARIA BREBISSONII	2.00	2.00
AMPHORA OVALIS	2.00	2.00
CYMBELLA AFFINIS	4.00	2.00
GOMPHONEMA INTRICATUM	2.00	
NITZSCHIA CAPITELLATA	11.00	11.00
NITZSCHIA DISSIPATA	2.00	2.00
NITZSCHIA FRUSTULUM	3.00	5.00
NITZSCHIA LINEARIS	12.00	
NITZSCHIA PALEA	8.00	2.00
SURIRELLA OVATA	2.00	
SURIRELLA OVALIS	8.00	4.00
EUGLENOPHYTA		
EUGLENA SPP	2.00	14.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	71.00	61.00

APPENDIX E-7-2 (Continued)

SITE = 03

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
SCHIZOTHRIX CALCICOLA	5.00	
CHLOROPHYTA		
CHLOROPHYTA I	89.00	105.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	8.00	
ACHNANTHES LANCEOLATA	5.00	11.00
ACHNANTHES MINUTISSIMA	65.00	89.00
ANOMOEONEIS SPHAEROPHORA	22.00	27.00
NAVICULA ARVENSIS	3.00	19.00
NAVICULA CRYPTOCEPHALA	86.00	76.00
NAVICULA PELLICULOSA	130.00	100.00
NAVICULA SALINARUM VAR. INTERMEDIA		8.00
NAVICULA TRIPUNCTATA	8.00	11.00
NAVICULA VIRIDULA	3.00	3.00
NAVICULA SP 2	30.00	19.00
NAVICULA SP 5	3.00	

APPENDIX E-7-2 (Continued)

SITE = 03

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
PINNULARIA BREBISSONII		3.00
CYMBELLA MICROCEPHALA	3.00	
CYMBELLA VENTRICOSA	3.00	3.00
GOMPHONEMA OLIVACEUM	5.00	
EPITHEMIA ZEBRA	3.00	
CYLINDROTHECA GRACILIS	5.00	
NITZSCHIA CAPITELLATA	46.00	27.00
NITZSCHIA DISSIPATA	3.00	
NITZSCHIA FUNTICOLA		3.00
NITZSCHIA FRUSTULUM	22.00	14.00
NITZSCHIA LINEARIS	35.00	16.00
NITZSCHIA PALEA	81.00	46.00
SURIRELLA OVALIS	8.00	8.00
EUGLENOPHYTA		
EUGLENA PROXIMA		8.00
EUGLENA SPP	5.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	149.00	143.00

APPENDIX E-7-2 (Continued)

SITE = 04

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	3.00	2.00
CHLOROPHYTA I	16.00	19.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	16.00	14.00
SYNEDRA AMPHICEPHALA	5.00	2.00
ACHNANTHES LANCEOLATA	8.00	3.00
ACHNANTHES MINUTISSIMA	38.00	38.00
CYMBELLA ACUMINATUM	.20	.14
ANOMOEONEIS SPHAEROPHORA		2.00
NAVICULA CRYPTOCEPHALA	97.00	122.00
NAVICULA CUSPIDATA	.02	
NAVICULA LANCEOLATA	3.00	
NAVICULA PELLICULOSA	22.00	20.00
NAVICULA TRIPUNCTATA	3.00	
NAVICULA VIRIDULA		4.00
PINNULARIA BREBISSONII		.02
CYMBELLA AFFINIS	5.00	
GOMPHONEMA PARVULUM		2.00

APPENDIX E-7-2 (Continued)

SITE = 04

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CYLINDROTHECA GRACILIS	3.00	
NITZSCHIA ACICULARIS	11.00	4.00
NITZSCHIA CAPITELLATA	3.00	6.00
NITZSCHIA DENTICULA	3.00	
NITZSCHIA FRUSTULUM	5.00	4.00
NITZSCHIA LINEARIS	54.00	40.00
NITZSCHIA PALEA	5.00	11.00
EUGLENOPHYTA		
EUGLENA SPP		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	70.00	50.00

APPENDIX E-7-2 (Continued)

SITE = 05

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
STIGEOCLONIUM SPP	.40	
ANKISTRODESMUS FALCATUS	3.00	3.00
CLOSTERIUM LEIBLEINII	.40	.46
CHLOROPHYTA I	22.00	32.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	14.00	14.00
DIATOMA TENUE		14.00
DIATOMA VULGARE	3.00	
FRAGILARIA CONSTRUENS	5.00	
FRAGILARIA CROTONENSIS	22.00	24.00
SYNEDRA AMPHICEPHALA	38.00	32.00
SYNEDRA ULNA	49.00	57.00
COCCONEIS PEDICULUS	54.00	59.00
ACHNANTHES LANCEOLATA	8.00	24.00
ACHNANTHES MINUTISSIMA	76.00	159.00
RHOICOSPHENIA CURVATA	8.00	3.00
PLEUROSIGMA DELICATULUM	8.00	14.00
ANOMOEONEIS SPHAEROPHORA		3.00

APPENDIX E-7-2 (Continued)

SITE = 05

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	57.00	32.00
NAVICULA CUSPIDATA	.02	.08
NAVICULA LANCEOLATA		5.00
NAVICULA OBLONGA		3.00
NAVICULA PELLICULOSA	46.00	22.00
NAVICULA VIRIDULA	17.00	11.00
CALONEIS AMPHISBAENA	.02	.06
PINNULARIA VIRIDIS	.12	.32
CYMBELLA VENTRICOSA	3.00	3.00
GOMPHONEMA INTRICATUM	11.00	8.00
GOMPHONEMA LANCEOLATUM	3.00	3.00
GOMPHONEMA PARVULUM		3.00
GOMPHONEMA VENTRICOSUM	5.00	3.00
NITZSCHIA ACICULARIS	143.00	154.00
NITZSCHIA CAPITELLATA	19.00	14.00
NITZSCHIA FRUSTULUM	19.00	5.00
NITZSCHIA HOLSATICA	86.00	81.00
NITZSCHIA LINEARIS	5.00	3.00
NITZSCHIA PALEA	40.00	27.00
NITZSCHIA VERMICULARIS		.02

APPENDIX E-7-2 (Continued)

SITE = 05

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CYMATOPLEURA ELLIPTICA	3.00	
SURIRELLA OVATA	8.00	8.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	8.00	11.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	113.00	92.00

APPENDIX E-7-2 (Continued)

SITE = 07

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
MERISMOPEDIA GLAUCA	76.00	
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	5.00	5.00
ZYGNEMA SPP	5.00	
CLOSTERIUM LEIBLEINII	.72	.94
CHLOROPHYTA I	62.00	59.00
CHRYSOPHYTA		
PICOECA LACUSTRIS		43.00
CHRYSIDIASTRUM OCELLATUM		5.00
THALASSIOSIRA FLUVIATILIS	3.00	
PERIDION CIRCULARE	5.00	
FRAGILARIA VAUCHERIAE	3.00	
SYNEDRA AMPHICEPHALA	3.00	
ACHNANTHES LANCEOLATA	14.00	11.00
ACHNANTHES MINUTISSIMA	680.00	786.00
NAVICULA CRYPTOCEPHALA	132.00	113.00

2.4.2.625

APPENDIX E-7-2 (Continued)

SITE = 07

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CUSPIDATA		3.00
NAVICULA PELLICULOSA	43.00	24.00
NAVICULA SALINARUM VAR. INTERMEDIA	5.00	5.00
NAVICULA SP 2	5.00	5.00
PINNULARIA VIRIDIS		3.04
AMPHORA OVALIS	3.00	5.00
CYMBELLA AFFINIS		3.00
CYMBELLA VENTRICOSA	3.00	
GOMPHONEMA INTRICATUM	5.00	11.00
GOMPHONEMA OLIVACEUM		11.00
GOMPHONEMA VENTRICOSUM		3.00
EPITHEMIA SOREX	3.00	
NITZSCHIA ACICULARIS	3.00	3.00
NITZSCHIA CAPITELLATA	22.00	14.00
NITZSCHIA DENTICULA	11.00	8.00
NITZSCHIA FRUSTULUM	86.00	78.00
NITZSCHIA HOLSATICA	8.00	11.00
NITZSCHIA LINEARIS	62.00	40.00
NITZSCHIA PALEA	11.00	16.00
SURIRELLA OVALIS		3.00

APPENDIX E-7-2 (Continued)

SITE = 07

TAXON	REP A	REP B
	(CELLS/ML)	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	119.00	105.00

APPENDIX E-7-2 (Continued)

SITE = 08

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	11.00	16.00
CHLOROPHYTA		
CHLOROPHYTA I	32.00	24.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	324.00	292.00
SYNEDRA AMPHICEPHALA		3.00
ACHNANTHES LANCEOLATA	19.00	22.00
ACHNANTHES MINUTISSIMA	122.00	149.00
GYROSIGMA ACUMINATUM	.06	.06
NAVICULA ARVENSIS		5.00
NAVICULA CRYPTOCEPHALA	8.00	19.00
NAVICULA PELLICULOSA	3.00	16.00
PINNULARIA BREBISSONII		.02
CYMBELLA MICROCEPHALA	3.00	
CYMBELLA VENTRICOSA	5.00	
GOMPHONEMA INTRICATUM		3.00

2.4.2.628

APPENDIX E-7-2 (Continued)

SITE = 08

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA CLIVACEUM		3.00
RHOPALODIA GIBBA	3.00	
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA		3.00
NITZSCHIA FRUSTULUM	3.00	
NITZSCHIA PALEA	8.00	3.00
CYMATOPLEURA SOLEA	.02	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	65.00	73.00

APPENDIX E-7-2 (Continued)

SITE = 09

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
MERISMOPEDIA GLAUCA		192.00
OSCILLATORIA TENUIS	5.00	
OSCILLATORIA SPP	5.00	
CHLOROPHYTA		
ZYGNEMA SPP	3.32	
CLOSTERIUM LEIBLEINII	1.10	
CHLOROPHYTA 1	65.00	42.00
CHRYSOPHYTA		
FICUFCA LACUSTRIS	11.00	48.00
STEPHANODISCUS ASTRAEA		6.00
SYNEDRA AMPHICEPHALA	5.00	6.00
SYNEDRA ULNA	3.00	
ACHNANTHES LANCEOLATA	8.00	12.00
ACHNANTHES MINUTISSIMA	1628.00	1612.00
GYROSIGMA ACUMINATUM	1.20	
NAVICULA ARVENSIS	14.00	

APPENDIX E-7-2 (Continued)

SITE - 09

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	240.00	343.00
NAVICULA PELLICULOSA	24.00	12.00
NAVICULA SALINARUM	16.00	
NAVICULA TRIPUNCTATA	5.00	
NAVICULA VIRIDULA	8.00	18.00
NAVICULA SP 2	8.00	30.00
CALONEIS BACILLUM	11.00	12.00
AMPHORA OVALIS	11.00	12.00
AMPHORA OVALIS VAR. PEDICULUS		12.00
CYMBELLA AFFINIS	8.00	
CYMBELLA PUSILLA		6.00
GOMPHONEMA INTRICATUM		24.00
GOMPHONEMA OLIVACEUM	19.00	
GOMPHONEMA PARVULUM	8.00	
EPITHEMIA ZEBRA	3.00	
RHOPALODIA GIBBA	3.00	12.00
CYLINDROTHECA GRACILIS	3.00	
NITZSCHIA ACICULARIS	3.00	
NITZSCHIA CAPITELLATA	19.00	
NITZSCHIA DENTICULA	51.00	60.00

APPENDIX E-7-2 (Continued)

SITE = 09

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FRUSTULUM	133.00	162.00
NITZSCHIA HOLSATICA	5.00	
NITZSCHIA LINEARIS	51.00	18.00
NITZSCHIA PALEA	62.00	48.00
SURIRELLA OVATA		6.00
EUGLENOPHYTA		
EUGLENA SPP	3.00	
TRACHELOMONAS HISPIDA	3.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA		18.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	70.00	72.00

APPENDIX E-7-2 (Continued)

SITE = 12

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	54.00	
OSCILLATORIA TENUIS	.64	1.26
CHLOROPHYTA		
CLOSTERIUM LEIBLEINII		.12
CHLOROPHYTA I	216.00	216.00
CHRYSOPHYTA		
MERIDION CIRCULARE		54.00
ACHNANTHES LANCEOLATA	54.00	27.00
ACHNANTHES MINUTISSIMA	392.00	702.00
GYROSIGMA ACUMINATUM	.02	.10
NAVICULA ARVENSIS	81.00	
NAVICULA CRYPTOCEPHALA	526.00	594.00
NAVICULA MUTICA	13.00	
NAVICULA PELLICULOSA	135.00	
NAVICULA SALINARUM VAR. INTERMEDIA	27.00	
NAVICULA VIRIDULA	41.00	81.00

APPENDIX E-7-2 (Continued)

SITE = 12

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA SP 2	81.00	108.00
CALONEIS LACILLUM	13.00	81.00
PINNULARIA BREBISSONII		.02
AMPHORA OVALIS	27.00	
AMPHORA OVALIS VAR. PEDICULUS	13.00	
CYLINDROTHECA GRACILIS	67.00	108.00
NITZSCHIA APICULATA	13.00	27.00
NITZSCHIA CAPITELLATA	175.00	459.00
NITZSCHIA DENTICULA	108.00	297.00
NITZSCHIA DISSIPATA	67.00	108.00
NITZSCHIA FRUSTULUM	378.00	378.00
NITZSCHIA LINEARIS	41.00	81.00
NITZSCHIA PALEA	770.00	1134.00
SURIRELLA OVATA		27.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA		27.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	148.00	324.00

APPENDIX E-7-2 (Continued)

SITE - 13

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	8.00	
ANABAENA FLOS-AQUAE	5.00	
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA		3.00
MOUGEOTIA SPP	.12	.26
SPIROGYRA SPP	.94	
CHLOROPHYTA I	24.00	16.00
CHRYSOPHYTA		
BICOECA LACUSTRIS	32.00	
CHRYSIDIASTRUM OCELLATUM	108.00	113.00
CYCLOTELLA MENEGHINIANA	5.00	
MERIDION CIRCULARE	5.00	5.00
SYNEDRA AMPHICEPHALA	8.00	
ACHNANTHES LANCEOLATA	313.00	284.00
ACHNANTHES MINUTISSIMA	321.00	157.00
GYROSIGMA ACUMINATUM	.12	.04

APPENDIX E-7-2 (Continued)

SITE = 13

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
PLEUROSIGMA DELICATULUM		.02
NAVICULA AVENSIS	8.00	5.00
NAVICULA CRYPTOCEPHALA	59.00	149.00
NAVICULA PELLICULOSA	86.00	76.00
NAVICULA SALINARUM VAR. INTERMEDIA	32.00	3.00
NAVICULA VIRIDULA	5.00	11.00
NAVICULA SP 1		5.00
NAVICULA SP 2	5.00	
CALONEIS AMPHISBAENA	.06	.04
CALONEIS BACILLUM	3.00	3.00
PINNULARIA OBERISSONII	.06	.02
CYMBELLA AFFINIS		5.00
CYMBELLA TUMIDA	3.00	
GOMPHONEMA INTRICATUM	24.00	16.00
GOMPHONEMA OLIVACEUM	3.00	3.00
NITZSCHIA ACICULARIS	30.00	78.00
NITZSCHIA CAPITELLATA	16.00	8.00
NITZSCHIA FONTICOLA	5.00	
NITZSCHIA FRUSTULUM	5.00	22.00
NITZSCHIA LINEARIS		3.00

2.4.2.636

APPENDIX E-7-2 (Continued)

SITE - 13

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	22.00	14.00
SURIRELLA OVATA	5.00	5.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	65.00	62.00

APPENDIX E-7-2 (Continued)

SITE = 13

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	22.00	14.00
SURIRELLA OVATA	5.00	5.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	65.00	62.00

APPENDIX E-7-2 (Continued)

SITE = 14

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
SCHIZOTHRIX CALCICOLA	12.00	
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	60.00	36.00
ULOTHRIX SPP		24.00
STIGEOCLONIUM SPP	48.00	
SCENEDESMUS QUADRICAUDA	48.00	
CHLOROPHYTA I	228.00	216.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	613.00	1082.00
SYNEDRA AMPHICEPHALA	252.00	337.00
SYNEDRA FAPELICA	782.00	770.00
SYNEDRA MINUSCULA	204.00	204.00
SYNEDRA ULNA	12.00	36.00
ACHNANTHES MINUTISSIMA	1419.00	878.00
NAVICULA CRYPTOCEPHALA	36.00	96.00
NAVICULA GREGARIA	313.00	421.00

APPENDIX E-7-2 (Continued)

SITE = 14

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA PELLICULOSA	72.00	108.00
NAVICULA VIRIDULA	12.00	24.00
CYMBELLA AFFINIS	24.00	72.00
GOMPHONEMA INTRICATUM	12.00	12.00
NITZSCHIA ACICULARIS	84.00	84.00
NITZSCHIA CAPITELLATA	24.00	
NITZSCHIA DENTICULA	60.00	36.00
NITZSCHIA FRUSTULUM	36.00	60.00
NITZSCHIA LINEARIS	12.00	
NITZSCHIA PALEA	96.00	168.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	325.00	301.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	361.00	613.00

APPENDIX E-7-2 (Continued)

SITE = 17

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I	22973.00	31122.00
MERISMOPEDIA GLAUCA	3368.00	3849.00
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	60.00	
ULOTHRIX SPP		60.00
SCENEDESMUS BIJUGA	240.00	240.00
SCENEDESMUS QUADRICAUDA	1143.00	1022.00
MOUGEOTIA SPP	90.00	
ZYGNEMA SPP	210.00	481.00
CLOSTERIUM LEIBLEINII	30.00	
CHLOROPHYTA I	6315.00	5864.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	9863.00	19696.00
FRAGILARIA LEPTOSTAURON	60.00	
SYNEDRA AMPHICEPHALA	60.00	481.00
ACHNANTHES LANCEOLATA	60.00	60.00

APPENDIX E-7-2 (Continued)

SITE = 17

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES MINUTISSIMA	1383.00	1173.00
NAVICULA ARVENSIS		150.00
NAVICULA CRYPTOCEPHALA	4931.00	5503.00
NAVICULA CUSPIDATA	60.00	30.00
NAVICULA PELLICULOSA	60.00	30.00
NAVICULA VIRIDULA	391.00	60.00
NAVICULA SP 2	180.00	271.00
CALONEIS BACILLUM	60.00	90.00
CYMBELLA AFFINIS	30.00	30.00
CYMBELLA VENTRICOSA		30.00
GOMPHONEMA INTRICATUM	60.00	90.00
CYLINDROTHECA GRACILIS	30.00	30.00
NITZSCHIA CAPITELLATA	662.00	662.00
NITZSCHIA DENTICULA	150.00	60.00
NITZSCHIA DISSIPATA	120.00	180.00
NITZSCHIA FRUSTULUM	4871.00	7728.00
NITZSCHIA HOLSATICA	210.00	60.00
NITZSCHIA PALEA	1143.00	1173.00
SURIRELLA OVALIS		30.00
EUGLENOPHYTA		
EUGLENA SPP	421.00	541.00

APPENDIX E-7-2 (Continued)

SITE = 17

TAXON	REP A	REP B
	(CELLS/ML)	
EUGLENOPHYTA		
TRACHELOMONAS HISPIDA	30.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA	5924.00	6074.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	2255.00	1864.00

2.4.2.643

APPENDIX E-7-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	32.00	
OSCILLATORIA TENUIS		5.00
SCHIZOTHRIX CALCICOLA	5.00	14.00
ANABAENA SPP	5.00	8.00
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	5.00	
CLOSTERIUM LEIBLEINII	.02	
CHLOROPHYTA I	24.00	32.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	19.00	19.00
CYCLOTELLA MENEGHINIANA		3.00
FRAGILARIA CONSTRUENS	5.00	
SYNEDRA AMPHICEPHALA	5.00	5.00
SYNEDRA ULNA	5.00	
ACHNANTHES LANCEOLATA	3.00	
ACHNANTHES MINUTISSIMA	27.00	5.00

2.4.2.644

APPENDIX E-7-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
RHOICOSPHENIA CURVATA	5.00	3.00
GYROSIGMA ACUMINATUM	.02	
PLEUROSIGMA DELICATULUM	.32	5.00
NAVICULA CRYPTOCEPHALA	16.00	
NAVICULA GREGARIA		3.00
NAVICULA PELLICULOSA	5.00	8.00
NAVICULA SALINARUM VAR. INTERMEDIA	11.00	
NAVICULA VIRIDULA	3.00	
CYMBELLA VENTRICOSA		3.00
GOMPHONEMA LANCEOLATUM		3.00
AMPHIPRORA ALATA		.02
EPITHEMIA SOREX		3.00
CYLINDROTHECA GRACILIS		3.00
NITZSCHIA ACICULARIS	151.00	127.00
NITZSCHIA CAPITELLATA	51.00	27.00
NITZSCHIA FONTICOLA		3.00
NITZSCHIA FRUSTULUM	43.00	16.00
NITZSCHIA GRACILIS	8.00	
NITZSCHIA HOLSATICA	16.00	24.00
NITZSCHIA LINEARIS		3.00

APPENDIX E-7-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	32.00	22.00
SURIRELLA OVALIS	3.00	
EUGLENOPHYTA		
EUGLENA PROXIMA		3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	203.00	211.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	159.00	151.00

2.4.2.646

APPENDIX E-7-2 (Continued)

SITE = 20

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	5.00	
OSCILLATORIA TENUIS	3.00	
SCHIZOTHRIX CALCICOLA	111.00	59.00
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA		3.00
ANKISTRODESMUS FALCATUS	8.00	5.00
SPIROGYRA SPP		.50
CHLOROPHYTA I	84.00	38.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	254.00	327.00
CYCLOTELLA MENEGHINIANA	451.00	491.00
DIATOMA VULGARE		3.00
FRAGILARIA VAUCHERIAE		8.00
SYNEDRA AMPHICEPHALA	81.00	89.00
SYNEDRA PULCHELLA	89.00	111.00
SYNEDRA ULNA	8.00	

APPENDIX E-7-2 (Continued)

SITE = 20

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES MINUTISSIMA	197.00	146.00
GYROSIGMA ACUMINATUM	5.00	.64
NAVICULA CRYPTOCEPHALA	46.00	30.00
NAVICULA PELLICULOSA	8.00	32.00
NAVICULA SALINARUM VAR. INTERMEDIA	5.00	5.00
NAVICULA VIRIDULA	16.00	32.00
CALONEIS AMPHISBAENA	.04	.04
AMPHORA OVALIS VAR. PEDICULUS		3.00
CYMBELLA PUSILLA	11.00	27.00
GOMPHONEMA INTRICATUM		5.00
GOMPHONEMA LANCEOLATUM	3.00	
GOMPHONEMA OLIVACEUM	3.00	
AMPHIPRORA ALATA	43.00	24.00
CYLINDROTHECA GRACILIS		5.00
NITZSCHIA APICULATA	3.00	11.00
NITZSCHIA CAPITELLATA	16.00	16.00
NITZSCHIA FUNTICOLA	3.00	3.00
NITZSCHIA FRUSTULUM	51.00	27.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA PULSATICA	246.00	122.00

APPENDIX E-7-2 (Continued)

SITE - 20

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA LATENS	54.00	32.00
NITZSCHIA LINEARIS	3.00	8.00
NITZSCHIA PALEA	195.00	327.00
SURIRELLA OVATA	5.00	8.00
SURIRELLA OVALIS		8.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	35.00	32.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	97.00	151.00

2.4.2.649

RED [redacted] . APPENDIX E-7-2 (Continued)

SITE = 21

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	5.00	
SCHIZOTHRIX CALCICOLA	49.00	49.00
CHLOROPHYTA		
ANKISTRODESMUS FALCATUS	14.00	11.00
SPIROGYRA SPP	.68	5.00
CHLOROPHYTA I	35.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	286.00	297.00
CYCLOTELLA MENEGHINIANA	421.00	505.00
FRAGILARIA VAUCHERIAE	5.00	
SYNEDRA AMPHICEPHALA	51.00	62.00
SYNEDRA PULCHELLA	51.00	62.00
ACHNANTHES MINUTISSIMA	89.00	92.00
GYROSIGMA ACUMINATUM	8.00	.46
NAVICULA ARVENSIS	3.00	
NAVICULA CRYPTOCEPHALA	30.00	32.00

APPENDIX E-7-2 (Continued)

SITE = 21

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSUPHYTA		
NAVICULA CUSPIDATA		.02
NAVICULA PELLICULOSA	11.00	24.00
NAVICULA SALINARUM VAR. INTERMEDIA	3.00	3.00
NAVICULA VIRIDULA	8.00	11.00
NAVICULA SP 2	3.00	
CALONEIS AMPHISBAENA	.04	.02
PINNULARIA BREBISSONII		3.00
CYMBELLA PUSILLA	16.00	11.00
CYMBELLA VENTRICOSA		5.00
GOMPHONEMA INTRICATUM	3.00	3.00
AMPHIPRORA ALATA	24.00	16.00
EPITHEMIA SOREX		3.00
CYLINDROTHECA GRACILIS	3.00	5.00
NITZSCHIA APICULATA	8.00	8.00
NITZSCHIA CAPITELLATA	27.00	54.00
NITZSCHIA FRUSTULUM	22.00	38.00
NITZSCHIA GRACILIS		14.00
NITZSCHIA HULSATICA	49.00	62.00
NITZSCHIA LATENS	40.00	35.00
NITZSCHIA LINEARIS	3.00	3.00

APPENDIX E-7-2 (Continued)

SITE = 21

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	108.00	140.00
NITZSCHIA VERMICULARIS	.06	.02
SURIRELLA OVATA		8.00
SURIRELLA OVALIS		3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	94.00	86.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	143.00	130.00

2.4.2.652

APPENDIX E-7-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	.28	.10
SCHIZOTHRIX CALCICOLA	43.00	35.00
CHLOROPHYTA		
ANKISTRODESMUS FALCATUS		5.00
SPIROGYRA SPP	1.96	.72
CHLOROPHYTA I	62.00	27.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	165.00	86.00
CYCLOTELLA MENEGHINIANA	186.00	173.00
DIATOMA VULGARE	5.00	3.00
SYNEDRA AMPHICEPHALA	27.00	27.00
SYNEDRA PULCHELLA	14.00	11.00
ACHNANTHES MINUTISSIMA	32.00	65.00
GYROSIGMA ACUMINATUM	.30	.28
NAVICULA ARVENSIS	3.00	
NAVICULA CRYPTOCEPHALA	22.00	24.00

2.4.2.653

APPENDIX E-7-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CUSPIDATA	.04	.04
NAVICULA PELLICULOSA	8.00	14.00
NAVICULA VIRIDULA	8.00	8.00
CYMBELLA PUSILLA	5.00	11.00
GOMPHONEMA INTRICATUM	3.00	5.00
GOMPHONEMA VENTRICOSUM		3.00
AMPHIPRORA ALATA	5.00	11.00
EPITHEMIA SOREX		11.00
CYLINDROTHECA GRACILIS	14.00	16.00
NITZSCHIA CAPITELLATA	16.00	19.00
NITZSCHIA FRUSTULUM		14.00
NITZSCHIA HOLSATICA	40.00	70.00
NITZSCHIA LATENS	19.00	11.00
NITZSCHIA LINEARIS	3.00	
NITZSCHIA PALEA	86.00	81.00
NITZSCHIA VERMICULARIS	.10	.12
CYMATOPLEURA SOLEA	.02	
SURIRELLA OVATA	5.00	
EUGLENOPHYTA		
EUGLENA PROXIMA		5.00

2.4.2.654

APPENDIX E-7-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
EUGLENOPHYTA		
EUGLENA SPP	5.00	8.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	19.00	27.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	127.00	84.00

APPENDIX E-7-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
SCHIZOTHRIX CALCICOLA	5.00	5.00
ANABAENA SPP	3.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP	.44	.08
CHLOROPHYTA I	19.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	14.00	11.00
CYCLOTELLA MENEGHINIANA	3.00	14.00
STEPHANODISCUS ASTRAEA	8.00	8.00
DIATOMA VULGARE	35.00	27.00
FRAGILARIA CONSTRUENS		14.00
FRAGILARIA PINNATA	11.00	3.00
SYNEDRA ULNA	3.00	3.00
COCCONEIS PEDICULUS	3.00	3.00
ACHNANTHES MINUTISSIMA	14.00	5.00
GYROSIGMA ACUMINATUM	3.00	

APPENDIX E-7-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	19.00	32.00
NAVICULA CUSPIDATA	.02	
NAVICULA PELLICULOSA	3.00	11.00
NAVICULA SALINARUM VAR. INTERMEDIA	14.00	30.00
NAVICULA TRIPUNCTATA	5.00	5.00
NAVICULA VIRIDULA	19.00	22.00
NAVICULA SP 2	5.00	
CALONEIS AMPHISBAENA	.06	3.00
CALONEIS PACILLUM		3.00
AMPHORA OVALIS VAR. PEDICULUS		8.00
CYMBELLA AFFINIS	3.00	5.00
CYMBELLA VENTRICOSA	5.00	3.00
GOMPHONEMA INTRICATUM	5.00	3.00
GOMPHONEMA OLIVACEUM	5.00	22.00
GOMPHONEMA VENTRICOSUM	19.00	8.00
EPITHEMIA SOREX	24.00	19.00
NITZSCHIA ACICULARIS	3.00	5.00
NITZSCHIA DISSIPATA	19.00	27.00
NITZSCHIA FRUSTULUM	16.00	27.00
NITZSCHIA GRACILIS		3.00

2.4.2.657

APPENDIX E-7-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA HOLSATICA	8.00	22.00
NITZSCHIA PALEA	14.00	11.00
CYMATOPLEURA SOLEA	.02	3.00
SURIRELLA OVATA	3.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	19.00	

2.4.2.658

APPENDIX E-7-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	6.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP	.16	.90
CLOSTERIUM LEIBLEINII	.02	.02
CHLOROPHYTA 1	42.00	22.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	6.00	
THALASSIOSIRA FLUVIATILIS	3.00	16.00
CYCLOTELLA MENEGHINIANA	3.00	5.00
STEPHANODISCUS ASTRAEA	18.00	11.00
DIATOMA VULGARE	21.00	49.00
FRAGILARIA CAPUCINA	6.00	
FRAGILARIA PINNATA		5.00
SYNEDRA ULNA		5.00
COCCONEIS PEDICULUS	6.00	8.00
ACHNANTHES MINUTISSIMA	15.00	11.00

APPENDIX E-7-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GYROSIGMA ACUMINATUM	.02	
DIPLONEIS ELLIPTICA	3.00	
NAVICULA CRYPTOCEPHALA	12.00	14.00
NAVICULA PELLICULOSA		5.00
NAVICULA PUPULA		3.00
NAVICULA SALINARUM VAR. INTERMEDIA	57.00	51.00
NAVICULA TRIPUNCTATA		3.00
NAVICULA VIRIDULA	12.00	27.00
CALONEIS AMPHISBAENA	.04	.08
CALONEIS BACILLUM		3.00
AMPHORA OVALIS VAR. PEDICULUS	9.00	
CYMBELLA AFFINIS		8.00
CYMBELLA MEXICANA	.04	.14
CYMBELLA PUSILLA		5.00
GOMPHONEMA INTRICATUM	12.00	
GOMPHONEMA OLIVACEUM	15.00	5.00
GOMPHONEMA VENTRICOSUM	6.00	43.00
EPITHEMIA SOREX	39.00	30.00
RHOPALODIA GIBBA	3.00	
NITZSCHIA ACICULARIS	6.00	8.00

2.4.2.660

APPENDIX E-7-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA APICULATA	3.00	
NITZSCHIA CAPITELLATA	3.00	
NITZSCHIA DISSIPATA	24.00	8.00
NITZSCHIA FRUSTULUM	15.00	
NITZSCHIA GRACILIS		5.00
NITZSCHIA PULSATICA	18.00	27.00
NITZSCHIA PALEA		14.00
CYMATOPLEURA SOLEA	.04	.06
SURIRELLA UVATA	3.00	8.00
EUGLENOPHYTA		
EUGLENA SPP	12.00	5.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA		5.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	21.00	40.00

2.4.2.661

APPENDIX E-7-2 (Continued)

SITE - 25

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	3.00	.60
ANABAENA SPP	3.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP		.36
ANKISTRODESMUS FALCATUS	3.00	
MOUGEOTIA SPP	.16	11.00
CLOSTERIUM LEIBLEINII		.02
CHLOROPHYTA I	27.00	32.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	8.00	22.00
CYCLOTELLA MENEGHINIANA	8.00	3.00
STEPHANODISCUS ASTRAEA	3.00	5.00
DIATOMA VULGARE	27.00	27.00
FRAGILARIA PINNATA	3.00	5.00
SYNEDRA ULNA		3.00
CYCLONEIS PEDICULUS	3.00	5.00

2.4.2.662

APPENDIX E-7-2 (Continued)

SITE = 25

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES LANCEOLATA	5.00	
ACHNANTHES MINUTISSIMA	27.00	11.00
GYROSIGMA ACUMINATUM	.04	
NAVICULA CRYPTOCEPHALA	24.00	16.00
NAVICULA PELLICULOSA		3.00
NAVICULA SALINARUM VAR. INTERMEDIA	35.00	22.00
NAVICULA TRIPUNCTATA		3.00
NAVICULA VIRIDULA	14.00	22.00
CALONEIS AMPHISBAENA	.02	.16
AMPHORA OVALIS VAR. PEDICULUS	3.00	11.00
CYMBELLA AFFINIS	22.00	5.00
CYMBELLA MEXICANA	.10	.12
CYMBELLA SINUATA	3.00	
CYMBELLA VENTRICOSA		8.00
GOMPHONEMA OLIVACEUM	8.00	8.00
GOMPHONEMA VENTRICOSUM	14.00	5.00
EPITHEMIA SOREX	49.00	14.00
CYLINDROTHECA GRACILIS		3.00
NITZSCHIA ACICULARIS	5.00	8.00
NITZSCHIA APICULATA		5.00

APPENDIX E-7-2 (Continued)

SITE = 25

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA DISSIPATA	11.00	11.00
NITZSCHIA FRUSTULUM	24.00	46.00
NITZSCHIA HOLSATICA	11.00	35.00
NITZSCHIA LINEARIS		3.00
NITZSCHIA PALEA	5.00	3.00
CYMATOPLEURA SOLEA	.04	.24
SURIRELLA OVATA		3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	11.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	19.00	38.00

2.4.2.664

APPENDIX E-7-2 (Continued)

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS		11.00
CALOTHRIX SPP	3.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP	3.00	.24
CHLOROPHYTA I	23.00	70.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	9.00	19.00
CYCLOTELLA MENEGHINIANA	8.00	19.00
STEPHANODISCUS ASTRAEA	6.00	5.00
DIATOMA VULGARE	5.00	27.00
FRAGILARIA LEPTOSTAURON	3.00	5.00
FRAGILARIA PINNATA	3.00	8.00
FRAGILARIA SPP		11.00
SYNEDRA ULNA	2.00	3.00
COCCONEIS PEDICULUS		5.00
ACHNANTHES MINUTISSIMA	5.00	19.00

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FRUSTULUM	24.00	38.00
NITZSCHIA GRACILIS		5.00
NITZSCHIA HOLSATICA	16.00	30.00
NITZSCHIA IGNORATA		3.00
NITZSCHIA PALEA	5.00	11.00
CYMATOPLEURA SOLEA		.12
SURIRELLA OVATA	4.00	
EUGLENOPHYTA		
EUCLENA SPP	5.00	3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	4.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	31.00	54.00

2.4.2.666

APPENDIX E-7-2 (Continued)

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	24.00	30.00
NAVICULA PELLICULOSA	3.00	3.00
NAVICULA SALINARUM VAR. INTERMEDIA	20.00	27.00
NAVICULA TRIPUNCTATA	2.00	3.00
NAVICULA VIRIDULA	10.00	19.00
CALONEIS AMPHISBAENA		.12
AMPHORA OVALIS VAR. PEDICULUS	4.00	
CYMBELLA AFFINIS	8.00	19.00
CYMBELLA MEXICANA		.06
CYMBELLA VENTRICOSA		3.00
GOMPHONEMA INTRICATUM	5.00	
GOMPHONEMA OLIVACEUM	10.00	19.00
GOMPHONEMA VENTRICOSUM	14.00	8.00
EPITHEMIA SOREX	16.00	38.00
RHOPALODIA GIBBA		3.00
CYLINDROTHECA GRACILIS	2.00	
NITZSCHIA ACICULARIS	5.00	3.00
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA	5.00	8.00
NITZSCHIA FONTICOLA	2.00	3.00

2.4.2.667

APPENDIX E-7-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS		22.00
OSCILLATORIA TENUIS	6.00	5.00
ANABAENA SPP		3.00
CALOTHRIX SPP		5.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	.94	.64
ANKISTRODESMUS FALCATUS	6.00	
CHLOROPHYTA I	36.00	49.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	14.00	54.00
CYCLOTELLA MENEGHINIANA	6.00	5.00
STEPHANODISCUS ASTRAEA	4.00	8.00
DIATOMA VULGARE	6.00	43.00
FRAGILARIA CONSTRUENS	5.00	14.00
FRAGILARIA LEPTOSTAURON		5.00
FRAGILARIA PINNATA	3.00	

APPENDIX E-7-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
FRAGILARIA VAUCHERIAE		3.00
COCCONEIS PEDICULUS	12.00	19.00
ACHNANTHES MINUTISSIMA	18.00	8.00
PHOICOSPHENIA CURVATA		3.00
NAVICULA CRYPTOCEPHALA	24.00	19.00
NAVICULA PELLICULOSA	31.00	
NAVICULA SALINARUM VAR. INTERMEDIA	22.00	30.00
NAVICULA TRIPUNCTATA	3.00	
NAVICULA VIRIDULA	18.00	22.00
CALONEIS AMPHISBAENA	.04	.02
AMPHORA OVALIS VAR. PEDICULUS		5.00
CYMBELLA AFFINIS	9.00	8.00
CYMBELLA MEXICANA		.06
CYMBELLA VENTRICOSA	3.00	3.00
GOMPHONEMA INTRICATUM	3.00	5.00
GOMPHONEMA OLIVACEUM	4.00	16.00
GOMPHONEMA VENTRICOSUM	14.00	8.00
EPITHEMIA SUREX	19.00	19.00
NITZSCHIA ACICULARIS		3.00
NITZSCHIA DISSIPATA	10.00	5.00

2.4.2.669

APPENDIX E-7-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FONTICOLA	2.00	
NITZSCHIA FRUSTULUM	20.00	27.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA HOLSATICA	16.00	
NITZSCHIA IGNORATA		3.00
NITZSCHIA LINEARIS	2.00	
NITZSCHIA PALEA	4.00	
CYMATOPLEURA SOLEA	.04	.02
EUGLENOPHYTA		
EUGLENA SPP	2.00	3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	2.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	26.00	51.00

APPENDIX E-7-2 (Continued)

SITE = 28

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ULOTHRIX SPP		.06
STIGEOCLONIUM SPP	.26	.50
ACTINASTRUM HANTZSCHII		11.00
CHLOROPHYTA I	27.00	27.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	19.00	27.00
CYCLOTELLA MENEGHINIANA	14.00	5.00
STEPHANODISCUS ASTRAEA	14.00	11.00
DIATOMA VULGARE	14.00	22.00
FRAGILARIA LEPTOSTAURON		5.00
FRAGILARIA PINNATA		14.00
FRAGILARIA VAUCHERIAE		3.00
SYNEDRA AMPHICEPHALA	5.00	
SYNEDRA ULNA		3.00
COCCONEIS PEDICULUS	5.00	3.00
ACHNANTHES MINUTISSIMA		11.00
NAVICULA ARVENSIS		3.00
NAVICULA CRYPTOCEPHALA	22.00	32.00

2.4.2.671

APPENDIX E-7-2 (Continued)

SITE = 28

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ULOTHRIX SPP		.06
STIGEOCLONIUM SPP	.26	.50
ACTINASTRUM HANTZSCHII		11.00
CHLOROPHYTA 1	27.00	27.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	19.00	27.00
CYCLOTELLA MENEGHINIANA	14.00	5.00
STEPHANODISCUS ASTRAEA	14.00	11.00
DIATOMA VULGARE	14.00	22.00
FRAGILARIA LEPTOSTAURON		5.00
FRAGILARIA PINNATA		14.00
FRAGILARIA VAUCHERIAE		3.00
SYNEDRA AMPHICEPHALA	5.00	
SYNEDRA ULNA		3.00
COCCONEIS PEDICULUS	5.00	3.00
ACHNANTHES MINUTISSIMA		11.00
NAVICULA ARVENSIS		3.00
NAVICULA CRYPTOCEPHALA	22.00	32.00

2.4.2.672

APPENDIX E-7-2 (Continued)

SITE = 28

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA SALINARUM VAR. INTERMEDIA	38.00	65.00
NAVICULA VIRIDULA	5.00	22.00
CALONEIS AMPHISBAENA	.06	3.00
AMPHORA OVALIS VAR. PEDICULUS	3.00	11.00
CYMBELLA AFFINIS	24.00	8.00
CYMBELLA MEXICANA	.02	
CYMBELLA SINUATA	5.00	
CYMBELLA VENTRICOSA	3.00	11.00
GOMPHONEMA INTRICATUM	22.00	5.00
GOMPHONEMA OLIVACEUM	35.00	5.00
GOMPHONEMA VENTRICOSUM	16.00	5.00
EPITHEMIA SOREX	16.00	49.00
NITZSCHIA DISSIPATA	8.00	16.00
NITZSCHIA FONTICOLA		3.00
NITZSCHIA FRUSTULUM	30.00	19.00
NITZSCHIA GRACILIS		5.00
NITZSCHIA HOLSATICA	14.00	16.00
NITZSCHIA PALEA	19.00	8.00
CYMATOPLEURA SOLEA	.04	3.00
SURIRELLA OVATA	5.00	11.00

2.4.2.673

APPENDIX E-7-2 (Continued)

SITE - 28

TAXON	REP A	REP B
	(CELLS/ML)	
EUGLENOPHYTA		
EUGLENA SPP	3.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	22.00	32.00

APPENDIX E-7-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA SPP	3.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP		.12
ANKISTRODESMUS FALCATUS		3.00
CHLOROPHYTA I	25.00	40.00
CHRYSOPHYTA		
DICTYOSPHAERIUM PULCHELLUM	22.00	
THALASSIOSIRA FLUVIATILIS	11.00	38.00
CYCLOTELLA MENEGHINIANA	3.00	16.00
STEPHANODISCUS ASTRAEA	8.00	16.00
DIATOMA VULGARE	5.00	24.00
FRAGILARIA CONSTRUENS		5.00
FRAGILARIA LEPTOSTAURON		11.00
FRAGILARIA PINNATA		8.00
COCCONEIS PEDICULUS	3.00	3.00
ACHNANTHES MINUTISSIMA	5.00	5.00

APPENDIX E-7-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	22.00	40.00
NAVICULA PELLICULOSA	5.00	3.00
NAVICULA SALINARUM VAR. INTERMEDIA	18.00	24.00
NAVICULA TRIPUNCTATA	1.00	
NAVICULA VIRIDULA	5.00	16.00
CALONEIS AMPHISBAENA		.18
CYMBELLA AFFINIS	3.00	11.00
CYMBELLA VENTRICOSA	1.00	
GOMPHONEMA INTRICATUM	5.00	8.00
GOMPHONEMA OLIVACEUM	11.00	22.00
GOMPHONEMA VENTRICOSUM	1.00	3.00
EPITHEMIA SOREX	9.00	59.00
CYLINDROTHECA GRACILIS		14.00
NITZSCHIA ACICULARIS	3.00	3.00
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA	4.00	19.00
NITZSCHIA FONTICOLA		5.00
NITZSCHIA FRUSTULUM	15.00	40.00
NITZSCHIA HOLSATICA	16.00	43.00
NITZSCHIA LINEARIS		3.00

2.4.2.676

APPENDIX E-7-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	8.00	22.00
NITZSCHIA VERMICULARIS		3.00
CYMATOPLEURA SOLEA	.02	.04
SURIRELLA OVATA		3.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	5.00	5.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	25.00	27.00

2.4.2.677

APPENDIX E-7-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I		32.00
OSCILLATORIA TENUIS		11.00
SCHIZOTHRIX CALCICOLA	5.00	
CHLOROPHYTA		
ULOTHRIX SPP		3.00
CHLOROPHYTA I	35.00	49.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	19.00	22.00
CYCLOTELLA MENEGHINIANA	5.00	16.00
STEPHANODISCUS ASTRAEA	22.00	8.00
DIATOMA VULGARE	8.00	32.00
FRAGILARIA CONSTRUENS		5.00
FRAGILARIA LEPTOSTAURON	5.00	
FRAGILARIA PINNATA	3.00	
SYNEDRA ULNA	3.00	8.00
CYCLOPEIS PLOICULUS	8.00	3.00

APPENDIX E-7-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES MINUTISSIMA	5.00	32.00
NEIDIUM AFFINE		3.00
NAVICULA CRYPTOCEPHALA	22.00	35.00
NAVICULA PELLICULOSA		11.00
NAVICULA SALINARUM VAR. INTERMEDIA	30.00	54.00
NAVICULA VIRIDULA	8.00	30.00
CALONEIS AMPHISBAENA	.02	3.00
CALONEIS BACILLUM		3.00
AMPHORA OVALIS VAR. PEDICULUS	3.00	5.00
CYMBELLA AFFINIS	22.00	11.00
CYMBELLA MEXICANA	.02	.04
CYMBELLA VENTRICOSA	5.00	3.00
GOMPHONEMA INTRICATUM	5.00	5.00
GOMPHONEMA OLIVACEUM	27.00	8.00
GOMPHONEMA VENTRICOSUM	8.00	22.00
EPITHEMIA SOREX	38.00	65.00
CYLINDROTHECA GRACILIS		8.00
NITZSCHIA ACICULARIS	8.00	5.00
NITZSCHIA APICULATA	11.00	
NITZSCHIA DISSIPATA	8.00	14.00

APPENDIX E-7-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FUNTICOLA	3.00	
NITZSCHIA FRUSTULUM	27.00	46.00
NITZSCHIA GRACILIS	3.00	5.00
NITZSCHIA HOLSATICA	43.00	22.00
NITZSCHIA LINEARIS		8.00
NITZSCHIA PALEA	5.00	14.00
NITZSCHIA VERMICULARIS		.02
CYMATOPLEURA SOLEA	.06	.12
SURIRELLA OVATA		5.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	3.00	8.00
NICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	30.00	43.00

2.4.2.680

APPENDIX E-7-2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I		24.00
OSCILLATORIA TENUIS	3.00	9.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	.24	.16
CLOSTERIUM LEIBLEINII	.02	
CHLOROPHYTA I	42.00	60.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	33.00	18.00
CYCLOTELLA MENEGHINIANA	27.00	12.00
STEPHANODISCUS ASTRAEA	6.00	15.00
DIATOMA VULGARE	6.00	15.00
FRAGILARIA CAPUCINA	6.00	
FRAGILARIA PINNATA	6.00	
SYNEDRA ULNA	3.00	
COCCONEIS PEDICULUS	3.00	3.00
ACHNANTHES MINUTISSIMA	18.00	9.00

2.4.2.681

APPENDIX E-7-2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GYROSIGMA DELICATULUM	.04	
DIPLONEIS OBLONGELLA	3.00	
NAVICULA CRYPTOCEPHALA	21.00	36.00
NAVICULA PELLICULOSA	9.00	9.00
NAVICULA SALINARUM VAR. INTERMEDIA	48.00	33.00
NAVICULA VIRIDULA	21.00	21.00
CALONEIS AMPHISBAENA	.04	.06
AMPHORA OVALIS		6.00
AMPHORA OVALIS VAR. PEDICULUS	12.00	
CYMBELLA AFFINIS	3.00	12.00
CYMBELLA VENTRICOSA	15.00	3.00
GOMPHONEMA INTRICATUM	18.00	
GOMPHONEMA OLIVACEUM	6.00	27.00
GOMPHONEMA VENTRICOSUM	9.00	6.00
EPITHEMIA SOREX	42.00	45.00
NITZSCHIA ACICULARIS	6.00	3.00
NITZSCHIA APICULATA	3.00	
NITZSCHIA CAPITELLATA	3.00	
NITZSCHIA DISSIPATA	12.00	24.00
NITZSCHIA FONTICOLA		3.00

APPENDIX E-7-2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FRUSTULUM	45.00	39.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA HOLSATICA	30.00	33.00
NITZSCHIA HUNGARICA	3.00	
NITZSCHIA LINEARIS		6.00
NITZSCHIA PALEA	24.00	15.00
CYMATOPLEURA SOLEA	.08	.16
EUGLENOPHYTA		
EUGLENA SPP	6.00	12.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	9.00	9.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	75.00	87.00

APPENDIX E-7-2 (Continued)

SITE = 82

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I	60.00	36.00
OSCILLATORIA TENUIS		9.00
SCHIZOTHRIX CALCICOLA	9.00	
CALOTHRIX SPP	6.00	
CHLOROPHYTA		
ULOTHRIX SPP		6.00
STIGEOCLONIUM SPP	.18	1.02
ANKISTRODESMUS FALCATUS	3.00	6.00
SCENEDESMUS QUADRICAUDA		12.00
CLOSTERIUM LEIBLEINII	.04	
CHLOROPHYTA I	42.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	18.00	18.00
CYCLOTELLA MENEGHINIANA	12.00	
STEPHANODISCUS ASTRAEA	15.00	21.00
DIATOMA VULGARE	54.00	12.00

APPENDIX E-7- 2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FRUSTULUM	45.00	39.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA PULSATICA	30.00	33.00
NITZSCHIA HUNGARICA	3.00	
NITZSCHIA LINEARIS		6.00
NITZSCHIA PALEA	24.00	15.00
CYMATOPLEURA SOLEA	.08	.16
EUGLENOPHYTA		
EUGLENA SPP	6.00	12.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	9.00	9.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	75.00	87.00

APPENDIX E-7-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I	60.00	36.00
OSCILLATORIA TENUIS		9.00
SCHIZOTHRIX CALCICOLA	9.00	
CALOTHRIX SPP	6.00	
CHLOROPHYTA		
ULOTHRIX SPP		6.00
STIGEOCLONIUM SPP	.18	1.02
ANKISTRODESMUS FALCATUS	3.00	6.00
SCENEDESMUS QUADRICAUDA		12.00
CLOSTERIUM LEIBLEINII	.04	
CHLOROPHYTA I	42.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	18.00	18.00
CYCLOTELLA MENEGHINIANA	12.00	
STEPHANODISCUS ASTRAEA	15.00	21.00
DIATOMA VULGARE	54.00	12.00

APPENDIX E-7-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
FRAGILARIA CONSTRUENS	12.00	
FRAGILARIA PINNATA	3.00	
SYNEDRA PULCHELLA	3.00	
COCCONEIS PEDICULUS	6.00	
ACHNANTHES MINUTISSIMA	9.00	30.00
NAVICULA CRYPTOCEPHALA	30.00	24.00
NAVICULA LANCEOLATA		9.00
NAVICULA PELLICULOSA	9.00	6.00
NAVICULA SALINARUM VAR. INTERMEDIA	30.00	36.00
NAVICULA TRIPUNCTATA	3.00	3.00
NAVICULA VIRIDULA	21.00	15.00
CALONEIS AMPHISBAENA	.06	.06
AMPHORA OVALIS		3.00
AMPHORA OVALIS VAR. PEDICULUS	9.00	6.00
CYMBELLA AFFINIS	6.00	3.00
CYMBELLA MEXICANA	.10	.08
CYMBELLA SINUATA	3.00	
CYMBELLA TUMIDA		3.00
CYMBELLA VENTRICOSA		6.00
GOMPHONEMA INTRICATUM	6.00	6.00

APPENDIX E-7-2 (Continued)

SITE - 32

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA OLIVACEUM	27.00	24.00
GOMPHONEMA VENTRICOSUM	3.00	6.00
AMPHIPRORA ALATA	3.00	
EPITHEMIA SOREX	42.00	30.00
CYLINDROTHECA GRACILIS		3.00
NITZSCHIA ACICULARIS	6.00	
NITZSCHIA APICULATA	3.00	6.00
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA	9.00	9.00
NITZSCHIA FUNTICOLA	6.00	
NITZSCHIA FRUSTULUM	48.00	36.00
NITZSCHIA GRACILIS		3.00
NITZSCHIA PULSATICA	39.00	51.00
NITZSCHIA PALEA	18.00	6.00
CYMATOPLEURA SOLEA	.08	.04
SURIRELLA OVATA	3.00	3.00
EUGLENOPHYTA		
EUGLENA SPP	3.00	6.00

2.4.2.686

APPENDIX E-7-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CRYPTOPHYTA		
CRYPTOMONAS EROSA	6.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	42.00	42.00

APPENDIX E-7-2 (Continued)

SITE = 33

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I		36.00
OSCILLATORIA TENUIS		3.00
SCHIZOTHRIX CALCICOLA		9.00
ANABAENA SPP	6.00	
CALOTHRIX SPP	12.00	15.00
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA	3.00	6.00
STIGEOCLONIUM SPP		.30
CHLOROPHYTA I	72.00	54.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	27.00	18.00
CYCLOTELLA MENEGHINIANA	12.00	12.00
STEPHANODISCUS ASTRAEA	21.00	12.00
DIATOMA VULGARE	30.00	12.00
FRAGILARIA CAPUCINA	36.00	48.00
FRAGILARIA LEPTOSTAURON	9.00	6.00

2.4.2.688

APPENDIX E-7-2 (Continued)

SITE - 33

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
FRAGILARIA PINNATA	6.00	6.00
FRAGILARIA VAUCHERIAE		9.00
SYNEDRA ULNA	6.00	9.00
COCCONEIS PEDICULUS	3.00	6.00
ACHNANTHES MINUTISSIMA	27.00	21.00
GYROSIGMA ACUMINATUM	.38	.30
PLEUROSIGMA DELICATULUM	.20	.10
NAVICULA CRYPTOCEPHALA	75.00	45.00
NAVICULA CUSPIDATA	.02	
NAVICULA PUPULA	3.00	
NAVICULA SALINARUM VAR. INTERMEDIA	63.00	57.00
NAVICULA VIRIDULA	45.00	30.00
CALONEIS AMPHISBAENA	.58	.40
AMPHORA OVALIS VAR. PEDICULUS	18.00	9.00
CYMBELLA AFFINIS	9.00	12.00
CYMBELLA MEXICANA	.04	3.00
CYMBELLA SINUATA	3.00	3.00
CYMBELLA VENTRICOSA	6.00	6.00
GOMPHONEMA INTRICATUM	33.00	
GOMPHONEMA OLIVACEUM	27.00	21.00

2.4.2.689

APPENDIX E-7-2 (Continued)

SITE = 33

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA VENTRICOSUM	9.00	3.00
AMPHIPRORA ALATA		3.00
EPITHEMIA SOREX	81.00	48.00
RHOPALODIA GIBBA	3.00	3.00
CYLINDROTHECA GRACILIS	9.00	12.00
NITZSCHIA ACICULARIS	6.00	18.00
NITZSCHIA DISSIPATA	27.00	21.00
NITZSCHIA FONTICOLA		6.00
NITZSCHIA FRUSTULUM	63.00	45.00
NITZSCHIA GRACILIS	6.00	6.00
NITZSCHIA HOLSATICA	66.00	33.00
NITZSCHIA LINEARIS		18.00
NITZSCHIA PALEA	24.00	45.00
NITZSCHIA VERMICULARIS	.06	3.00
CYMATOPLEURA SOLEA	.52	.64
SURIRELLA OVATA	9.00	3.00
EUGLENOPHYTA		
EUGLENA SPP	6.00	6.00

2.4.2.690

APPENDIX E-7-2 (Continued)

SITE - 33

TAXON	REP A	REP B
	(CELLS/ML)	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	45.00	46.00

APPENDIX E-7-2 (Continued)

SITE = 34

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS		3.00
SCHIZOTHRIX CALCICOLA	9.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP	.62	.72
CLOSTERIUM LEIBLEINII	.02	
CHLOROPHYTA I	39.00	45.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	30.00	39.00
CYCLOTELLA MENEGHINIANA	15.00	12.00
STEPHANODISCUS ASTRAEA	24.00	36.00
DIATOMA VULGARE	45.00	30.00
FRAGILARIA LEPTOSTAURON		6.00
FRAGILARIA PINNATA	3.00	15.00
FRAGILARIA VAUCHERIAE	6.00	
SYNEDRA ULNA	3.00	
COCCONEIS PEDICULUS	9.00	24.00

APPENDIX E-7-2 (Continued)

SITE - 39

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES LANCEOLATA	6.00	
ACHNANTHES MINUTISSIMA	12.00	30.00
GYROSIGMA ACUMINATUM	.02	.08
AMPHORONEIS SPHAEROPHORA		3.00
NAVICULA CRYPTOCEPHALA	33.00	51.00
NAVICULA PELLICULOSA	6.00	6.00
NAVICULA SALINARUM VAR. INTERMEDIA	30.00	69.00
NAVICULA TRIPUNCTATA	3.00	
NAVICULA VIRIDULA	30.00	27.00
CALONEIS AMPHISBAENA	.04	.06
AMPHORA OVALIS VAR. PEDICULUS	6.00	
CYMBELLA AFFINIS	9.00	24.00
CYMBELLA MEXICANA	.06	.20
CYMBELLA SINUATA		3.00
CYMBELLA VENTRICOSA	6.00	6.00
GOMPHONEMA INTRICATUM	12.00	9.00
GOMPHONEMA OLIVACEUM	12.00	18.00
GOMPHONEMA VENTRICOSUM	12.00	3.00
EPITHEMIA SOREX	24.00	36.00
CYLINDROTHECA GRACILIS	3.00	3.00

APPENDIX E-7-2 (Continued)

SITE = 34

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA ACICULARIS	3.00	6.00
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA	24.00	12.00
NITZSCHIA FRUSTULUM	18.00	54.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA HOLSATICA	21.00	36.00
NITZSCHIA LINEARIS	6.00	
NITZSCHIA PALEA	9.00	30.00
NITZSCHIA VERMICULARIS	.02	
CYMATOPLEURA SOLEA	.06	.10
EUGLENOPHYTA		
EUGLENA SPP	6.00	
CRYPTOPHYTA		
CRYPTOMONAS FROSA	9.00	6.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	45.00	42.00

2.4.2.694

APPENDIX E-7- 2 (Continued)

SITE - 35

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	12.00	6.00
CALOTHRIX SPP	9.00	3.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	.40	3.00
CLOSTERIUM ACUTUM		.02
CLOSTERIUM LEIBLEINII		.02
CHLOROPHYTA I	42.00	36.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	21.00	18.00
CYCLOTELLA MENEGHINIANA	18.00	15.00
STEPHANODISCUS ASTRAEA	39.00	42.00
DIATOMA VULGARE	51.00	51.00
FRAGILARIA LEPTOSTAURON		6.00
FRAGILARIA PINNATA	3.00	6.00
FRAGILARIA VAUCHERIAE		3.00
COCCONEIS PEDICULUS	9.00	3.00

APPENDIX E-7-2 (Continued)

SITE = 35

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES MINUTISSIMA	12.00	24.00
CYROSIGMA ACUMINATUM	.10	.08
NAVICULA ARVENSIS	3.00	3.00
NAVICULA CRYPTOCEPHALA	42.00	51.00
NAVICULA CUSPIDATA	.02	.02
NAVICULA PELLICULOSA	9.00	12.00
NAVICULA SALINARUM VAR. INTERMEDIA	57.00	54.00
NAVICULA TRIPUNCTATA	6.00	
NAVICULA VIRIDULA	33.00	21.00
CALONEIS AMPHISBAENA	.04	.06
AMPHORA OVALIS VAR. PEDICULUS	6.00	6.00
CYMBELLA AFFINIS	21.00	18.00
CYMBELLA MEXICANA	.10	.08
CYMBELLA VENTRICOSA	6.00	9.00
GOMPHONEMA INTRICATUM	12.00	6.00
GOMPHONEMA OLIVACEUM	27.00	12.00
GOMPHONEMA VENTRICOSUM	30.00	12.00
AMPHIPRORA ALATA		3.00
EPITHEMIA SOREX	42.00	33.00
NITZSCHIA ACICULARIS	3.00	

2.4.2.696

APPENDIX E-7- 2 (Continued)

SITE = 35

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA APICULATA	3.00	
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DISSIPATA	12.00	30.00
NITZSCHIA FRUSTULUM	27.00	45.00
NITZSCHIA GRACILIS	6.00	
NITZSCHIA HULSATICA	45.00	57.00
NITZSCHIA LINEARIS	3.00	
NITZSCHIA PALEA	24.00	24.00
CYMATOPLEURA SOLEA	.10	.04
SURIRELLA OVATA	6.00	
EUGLENOPHYTA		
EUGLENA SPP	15.00	12.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	9.00	6.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	30.00	51.00

RBOSP PROGRESS REPORT

APPENDIX E-8-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-8-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

CYANOPHYTA

Cyanophyta I
Chroococcus dispersus
Oscillatoria tenuis
Oscillatoria spp.
Schizothrix calcicola
Anabaena spp.
Calothrix spp.

CHLOROPHYTA

Chlamydomonas globosa
Ulothrix spp.
Stigeoclonium spp.
Cladophora spp.
Oocystis pusilla
Oocystis spp.
Ankistrodesmus falcatus
Scenedesmus quadricauda
Crucigenia tetrapedia
Mougeotia spp.
Spirogyra spp.
Zygnema spp.
Closterium acutum
Closterium leibleinii
Closterium spp.
Chlorophyta I

CHRYSOPHYTA

Bicoeca lacustris
Chrysidiastrum ocellatum
Thalassiosira fluviatilis
Cyclotella meneghiniana
Stephanodiscus astraea
Stephanodiscus tenuis
Diatoma hiemale
Diatoma vulgare
Meridion circulare
Fragilaria construens
Fragilaria crotonensis
Fragilaria leptostauron

Fragilaria pinnata
Fragilaria vaucheriae
Hannaea arcus
Synedra amphicephala
Synedra famelica
Synedra minuscula
Synedra pulchella
Synedra tenera
Synedra ulna
Cocconeis pediculus
Cocconeis placentula
Achnanthes lanceolata
Achnanthes minutissima
Rhoicosphenia curvata
Mastogloia smithii
Amphipleura pellucida
Gyrosigma acuminatum
Pleurosigma delicatulum
Diploneis elliptica
Diploneis pseudovalis
Navicula arvensis
Navicula cryptocephala
Navicula cuspidata
Navicula elginensis
Navicula fragilarioides
Navicula gregaria
Navicula mutica
Navicula pelliculosa
Navicula protracta
Navicula pupula
Navicula salinarum
Navicula salinarum var. intermedia
Navicula subhamulata
Navicula tripunctata
Navicula viridula
Navicula sp. 1
Navicula sp. 2
Caloneis amphisbaena
Caloneis bacillum
Caloneis ventricosa
Pinnularia burealis
Pinnularia brebissonii
Pinnularia viridis
Amphora coffeiformis
Amphora ovalis
Amphora ovalis var. pediculus
Cymbella affinis

Cymbella mexicana
Cymbella microcephala
Cymbella prustrata
Cymbella pusilla
Cymbella sinuata
Cymbella ventricosa
Cymbella spp.
Didymosphenia geminata
Gomphonema intricatum
Gomphonema lanceolatum
Gomphonema olivaceum
Gomphonema parvulum
Gomphonema ventricosum
Gomphoneis herculeana
Amphiprora alata
Epithemia sorex
Epithemia zebra
Rhopalodia gibba
Rhopalodia gibberula
Cylindrotheca gracilis
Hantzschia amphioxys
Nitzschia acicularis
Nitzschia amphibia
Nitzschia angustata
Nitzschia apiculata
Nitzschia capitellata
Nitzschia denticula
Nitzschia dissipata
Nitzschia fonticola
Nitzschia frustulum
Nitzschia gracilis
Nitzschia holsatica
Nitzschia hungarica
Nitzschia lanceolata
Nitzschia latens
Nitzschia linearis
Nitzschia microcephala
Nitzschia palea
Nitzschia sigmoidea
Nitzschia vermicularis
Cymatopleura elliptica
Cymatopleura solea
Surirella angustata
Surirella ovata
Surirella ovalis

EUGLENOPHYTA

Euglena spp.

CRYPTOPHYTA

Cryptomonas erosa
Rhodomonas minuta

MICROFLAGELLATES

Flagellate (unidentified)

RBOSP PROGRESS REPORT

APPENDIX E-8-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-8-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975

SITE = 01

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CALOTHRIX SPP	6.00	
CHLOROPHYTA		
CHLOROPHYTA 1	111.00	57.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	117.00	72.00
FRAGILARIA VAUCHERIAE	3.00	
SYNEDRA AMPHICEPHALA	3.00	18.00
ACHNANTHES LANCEOLATA	9.00	6.00
ACHNANTHES MINUTISSIMA	120.00	87.00
GYROSIGMA ACUMINATUM	3.00	
NAVICULA ARVENSIS	9.00	3.00
NAVICULA CRYPTOCEPHALA	36.00	24.00
NAVICULA PELLICULOSA	6.00	9.00
NAVICULA SP 2		6.00
CALONEIS BACILLUM		3.00
PINNULARIA VIRIDIS	.08	.10

2.4.2.704

RBOSP PROGRESS REPORT

APPENDIX E-8-2 (Continued)

SITE = 01

TAXON	REP A (CELLS/ML)	REP B (CELLS/ML)
CHRYSOPHYTA		
GOMPHONEMA INTRICATUM	24.00	18.00
HANTZSCHIA AMPHIOXYS	3.00	3.00
NITZSCHIA ACICULARIS	21.00	39.00
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DENTICULA	6.00	
NITZSCHIA FRUSTULUM	15.00	24.00
NITZSCHIA LINEARIS	30.00	18.00
NITZSCHIA PALEA	9.00	3.00
SURIRELLA ANGUSTATA	3.00	
SURIRELLA OVALIS	3.00	
EUGLENOPHYTA		
EUGLENA SPP	3.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA	9.00	3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	78.00	48.00

2.4.2.705

APPENDIX E-8-2 (Continued)

SITE = 02

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLOROPHYTA I	32.00	14.00
CHRYSOPHYTA		
BICOECA LACUSTRIS	72.00	9.00
CHRYSIDIASTRUM OCELLATUM	16.00	
SYNEDRA AMPHICEPHALA	12.00	3.00
ACHNANTHES LANCEOLATA	8.00	4.00
ACHNANTHES MINUTISSIMA	22.00	10.00
NAVICULA ARVENSIS		1.00
NAVICULA CRYPTOCEPHALA	4.00	3.00
NAVICULA SP 2	2.00	
PINNULARIA BREBISSONII	2.06	.06
AMPHORA OVALIS VAR. PEDICULUS	4.00	
CYMBELLA AFFINIS		1.00
GOMPHONEMA INTRICATUM	6.00	
NITZSCHIA CAPITELLATA	2.00	
NITZSCHIA FRUSTULUM	3.00	3.00
NITZSCHIA LINEARIS	6.00	2.00
NITZSCHIA PALEA	2.00	

2.4.2.706

APPENDIX E-8-2 (Continued)

SITE = 07

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSUPHYTA		
SURIRELLA OVALIS		4.00
EUGLENOPHYTA		
EUGLENA SPP	3.00	1.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	2.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	66.00	15.00

2.4.2.707

APPENDIX E-8-2 (Continued)

SITE = 03

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLOROPHYTA I	66.00	48.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	18.00	36.00
STEPHANODISCUS ASTRAEA	3.00	
DIATOMA HIEMALE	12.00	3.00
ACHNANTHES LANCEOLATA	33.00	33.00
ACHNANTHES MINUTISSIMA	240.00	297.00
NAVICULA ARVENSIS	54.00	42.00
NAVICULA CRYPTOCEPHALA	81.00	60.00
NAVICULA FRAGILARIOIDES	24.00	27.00
NAVICULA PELLICULOSA	477.00	537.00
NAVICULA SP 2	39.00	27.00
CALONEIS BACILLUM	12.00	
PINNULARIA BREBISSONII	6.00	3.00
AMPHORA OVALIS VAR. PEDICULUS	12.00	
CYMBELLA AFFINIS	3.00	
GOMPHONEMA INTRICATUM	81.00	54.00
EPITHEMIA ZEBRA	9.00	

2.4.2.708

APPENDIX E-8-2 (Continued)

SITE = 03

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSUPHYTA		
NITZSCHIA ACICULARIS		3.00
NITZSCHIA CAPITELLATA	15.00	3.00
NITZSCHIA FRUSTULUM	63.00	24.00
NITZSCHIA LINEARIS	48.00	30.00
NITZSCHIA PALEA	60.00	9.00
SURIRELLA OVALIS	6.00	6.00
EUGLENOPHYTA		
EUGLENA SPP	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	111.00	72.00

2.4.2.709

APPENDIX E-8-2 (Continued)

SITE = 04

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLOROPHYTA 1	27.00	21.00
CHRYSOPHYTA		
EUGLENA LACUSTRIS	24.00	
CHRYSIDIASTRUM OCELLATUM	60.00	21.00
MERIDION CIRCULARE	18.00	3.00
ACHNANTHES LANCEOLATA	72.00	9.00
ACHNANTHES MINUTISSIMA	285.00	159.00
GYROSIGMA ACUMINATUM	.16	.10
NAVICULA CRYPTOCEPHALA	93.00	30.00
NAVICULA PELLICULOSA	21.00	3.00
NAVICULA VIRIDULA	3.00	3.00
NAVICULA SP 2	3.00	
PINNULARIA BREBISSONII	.06	
GOMPHONEMA INTRICATUM	21.00	27.00
NITZSCHIA ACICULARIS		6.00
NITZSCHIA DENTICULA		3.00
NITZSCHIA FRUSTULUM	36.00	6.00
NITZSCHIA LINEARIS	51.00	15.00

APPENDIX E-8-2 (Continued)

SITE = 04

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	48.00	27.00

2.4.2.711

APPENDIX E-8-2 (Continued)

SITE = 05

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLAMYDOMONAS GLOBOSA		2.00
CLOSTERIUM ACUTUM		.02
CHLOROPHYTA 1	18.00	15.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	6.00	2.00
DIATOMA VULGARE	66.00	33.00
FRAGILARIA VAUCHERIAE		2.00
SYNEDRA AMPHICEPHALA	36.00	21.00
SYNEDRA ULNA	6.00	
CYCLOTELLA PEDICULUS		20.00
ACHNANTHES MINUTISSIMA	60.00	15.00
RHOICOSPHENIA CURVATA	3.00	
PLEUROSIGMA DELICATULUM	3.00	.44
NAVICULA CRYPTOCEPHALA	12.00	4.00
NAVICULA CUSPIDATA	3.00	
NAVICULA VIRIDULA	3.00	2.00
NAVICULA SP 2		2.00
CALONEIS AMPHISBAENA	3.00	

2.4.2.712

APPENDIX E-8-2 (Continued)

SITE = 05

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CALONEIS BACILLUM		2.00
PINNULARIA VIRIDIS	.12	.02
GOMPHONEMA INTRICATUM	30.00	20.00
NITZSCHIA ACICULARIS		2.00
NITZSCHIA CAPITELLATA	3.00	8.00
NITZSCHIA FRUSTULUM	30.00	4.00
NITZSCHIA PALEA	3.00	2.00
NITZSCHIA VERMICULARIS	.04	.02
CRYPTOPHYTA		
CRYPTOMONAS EROSA		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	45.00	30.00

APPENDIX E-8-2 (Continued)

SITE = 07

TAXON	REP A (CELLS/ML)	REP B (CELLS/ML)
CYANOPHYTA		
OSCILLATORIA TENUIS	3.00	
CHLOROPHYTA		
ZYGNEMA SPP	.30	4.00
CLOSTERIUM LEIBLEINII	.50	2.00
CHLOROPHYTA 1	69.00	60.00
CHRYSOPHYTA		
BICUECA LACUSTRIS	72.00	
SYNEDRA AMPHICEPHALA	3.00	
ACHNANTHES LANCEOLATA	15.00	9.00
ACHNANTHES MINUTISSIMA	369.00	360.00
GYROSIGMA ACUMINATUM	1.04	.32
NAVICULA ARVENSIS	15.00	6.00
NAVICULA CRYPTOCEPHALA	120.00	147.00
NAVICULA PELLICULOSA	6.00	6.00
NAVICULA SALINARUM VAR. INTERMEDIA	3.00	
NAVICULA VIRIDULA	18.00	2.00

2.4.2.714

APPENDIX E-8-2 (Continued)

SITE = 07

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA SP 2	45.00	9.00
PINNULARIA PREBISSONII	3.00	
AMPHORA OVALIS	3.00	
CYMBEL A AFFINIS		6.00
GOMPHONEMA INTRICATUM	54.00	6.00
EPITHEMIA SOREX	3.00	
CYLINDROTHECA GRACILIS	3.00	
NITZSCHIA ACICULARIS	3.00	
NITZSCHIA APICULATA	3.00	
NITZSCHIA DENTICULA	24.00	12.00
NITZSCHIA DISSIPATA		3.00
NITZSCHIA FRUSTULUM		78.00
NITZSCHIA LINEARIS	30.00	12.00
NITZSCHIA PALEA	3.00	3.00
SURIRELLA ANGUSTATA		2.00
SURIRELLA OVATA	9.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	45.00	42.00

2.4.2.715

APPENDIX E-8-2 (Continued)

SITE = 08

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLOROPHYTA I	36.00	57.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	525.00	651.00
CYCLOTELLA MENEGHINIANA	3.00	
ACHNANTHES LANCEOLATA	138.00	162.00
ACHNANTHES MINUTISSIMA	210.00	213.00
NAVICULA ARVENSIS	3.00	6.00
NAVICULA CRYPTOCEPHALA	3.00	6.00
NAVICULA PELLICULOSA	6.00	3.00
CALONEIS BACILLUM	3.00	3.00
CYMBELLA AFFINIS		3.00
GOMPHONEMA INTRICATUM	3.00	12.00
NITZSCHIA FRUSTULUM	6.00	6.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	87.00	75.00

2.4.2.716

APPENDIX E-8-2 (Continued)

SITE = 09

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	6.00	
CHLOROPHYTA		
CLOSTERIUM LEIBLEINII		.10
CLOSTERIUM SPP	.02	
CHLOROPHYTA 1	33.00	33.00
CHRYSOPHYTA		
MERIDION CIRCULARE	3.00	
FRAGILARIA CROTONENSIS	45.00	6.00
ACHNANTHES MINUTISSIMA	480.00	285.00
GYROSIGMA ACUMINATUM	.10	.12
NAVICULA ARVENSIS	9.00	3.00
NAVICULA CRYPTOCEPHALA	60.00	18.00
NAVICULA GREGARIA	6.00	
NAVICULA PELLICULOSA	12.00	
NAVICULA SP 2	9.00	6.00
CALONEIS BACILLUM	3.00	3.00

2.4.2.717

APPENDIX E-8-2 (Continued)

SITE = 09

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
PINNULARIA VIRIDIS	.04	.04
AMPHORA OVALIS	6.00	
CYMBELLA MICROCEPHALA	6.00	
GOMPHONEMA INTRICATUM		3.00
NITZSCHIA ACICULARIS	6.00	
NITZSCHIA CAPITELLATA	3.00	3.00
NITZSCHIA DENTICULA	15.00	6.00
NITZSCHIA FRUSTULUM	48.00	36.00
NITZSCHIA LANCEOLATA	6.00	
NITZSCHIA LINEARIS	6.00	15.00
NITZSCHIA PALEA	9.00	3.00
SURIRELLA OVATA		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	48.00	48.00

2.4.2.718

APPENDIX E-8-2 (Continued)

SITE = 13

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
SPIROGYRA SPP	36.00	2.00
CHLOROPHYTA 1	42.00	12.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM	177.00	153.00
DIATOMA VULGARE		6.00
MERIDION CIRCULARE	54.00	45.00
SYNEDRA AMPHICEPHALA	3.00	
SYNEDRA MINUSCULA	3.00	
ACHNANTHES LANCEOLATA	60.00	72.00
ACHNANTHES MINUTISSIMA	126.00	381.00
GYPOSIGMA ACUMINATUM	.08	.06
NAVICULA ARVENSIS		3.00
NAVICULA CRYPTOCEPHALA	126.00	126.00
NAVICULA PELLICULOSA	24.00	57.00
NAVICULA TRIPUNCTATA	3.00	
CALONEIS AMPHISBAENA		.02
AMPHORA OVALIS	3.00	
CYMBELLA AFFINIS		3.00

2.4.2.719

APPENDIX E-8-2 (Continued)

SITE = 13

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA INTRICATUM	21.00	18.00
NITZSCHIA ACICULARIS		6.00
NITZSCHIA LINEARIS		3.00
NITZSCHIA PALEA	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	57.00	18.00

APPENDIX E-8-2 (Continued)

SITE = 14

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	12.00	
CHLOROPHYTA		
CHLOROPHYTA I		24.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	6.00	
SYNEDRA AMPHICEPHALA	12.00	2.00
SYNEDRA FAMELICA	3.00	
ACHNANTHES LANCEOLATA		2.00
ACHNANTHES MINUTISSIMA	6.00	21.00
NAVICULA CRYPTOCEPHALA	2.00	
NAVICULA GREGARIA	1.00	
NAVICULA PELLICULOSA	2.00	2.00
CYMBELLA AFFINIS	4.00	
CYMBELLA MICROCEPHALA	2.00	
CYMBELLA VENTRICOSA	1.00	
GOMPHONEMA INTRICATUM	2.00	2.00

2.4.2.721

APPENDIX E-8-2 (Continued)

SITE = 14

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA ACICULARIS	1.00	
NITZSCHIA FRUSTULUM	1.00	
CRYPTOPHYTA		
CRYPTOMONAS EROSA	25.00	28.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	16.00	22.00

APPENDIX E-8-2 (Continued)

SITE = 15

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ULOTHRIX SPP		72.00
STIGEOCLONIUM SPP	36.00	
CHLOROPHYTA I	36.00	204.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	30.00	
MERIDION CIRCULARE	24.00	
FRAGILARIA CONSTRUENS	6.00	
SYNEDRA AMPHICEPHALA	062.00	2400.00
SYNEDRA FAMELICA	12.00	
SYNEDRA TENERA	18.00	
SYNEDRA ULNA	6.00	
ACHNANTHES LANCEOLATA	18.00	
ACHNANTHES MINUTISSIMA		36.00
NAVICULA ARVENSIS		24.00
NAVICULA CRYPTOCEPHALA	84.00	192.00
NAVICULA CUSPIDATA	.14	
NAVICULA MUTICA	12.00	12.00
NAVICULA PELLICULOSA	66.00	24.00

2.4.2.723

APPENDIX E-8-2 (Continued)

SITE = 15

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA PUPULA	12.00	
NAVICULA SALINARUM VAR. INTERMEDIA		12.00
NAVICULA VIRIDULA	12.00	
NAVICULA SP 1	162.00	12.00
NAVICULA SP 2	90.00	
CALONEIS AMPHISBAENA	.22	
CALONEIS BACILLUM	6.00	
CALONEIS VENTRICOSA	12.00	
PINNULARIA BREBISSONII	12.00	24.00
PINNULARIA VIRIDIS	.10	
GOMPHONEMA INTRICATUM	6.00	12.00
NITZSCHIA ACICULARIS	502.00	2112.00
NITZSCHIA CAPITELLATA	108.00	48.00
NITZSCHIA DENTICULA	30.00	36.00
NITZSCHIA FRUSTULUM	318.00	216.00
NITZSCHIA LATENS	72.00	48.00
NITZSCHIA MICROCEPHALA	6.00	
NITZSCHIA PALEA	6.00	24.00
SURIRELLA OVALIS	.30	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	6.00	228.00

APPENDIX E-8-2 (Continued)

SITE = 17

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
CHLOROPHYTA 1	510.00	510.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	30.00	30.00
SYNEDRA AMPHICEPHALA	150.00	90.00
ACHNANTHES LANCEOLATA	180.00	30.00
ACHNANTHES MINUTISSIMA	390.00	60.00
NAVICULA ARVENSIS	90.00	60.00
NAVICULA CRYPTOCEPHALA	870.00	450.00
NAVICULA GREGARIA		30.00
NAVICULA PELLICULOSA	390.00	120.00
NAVICULA PUPULA		30.00
NAVICULA VIRIDULA	30.00	
NAVICULA SP 2	210.00	
CALONEIS BACILLUM	60.00	30.00
CALONEIS VENTRICOSA		30.00
CYMBELLA MICROCEPHALA	60.00	
CYMBELLA VENTRICOSA		30.00
GOMPHONEMA OLIVACEUM		30.00

2.4.2.725

APPENDIX E-8-2 (Continued)

SITE = 17

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
EPITHEMIA SOREX	90.00	
RHOPALODIA GIBBA		60.00
CYLINDROTHECA GRACILIS	180.00	
HANTZSCHIA AMPHIOXYS		30.00
NITZSCHIA APICULATA	30.00	
NITZSCHIA CAPITELLATA	690.00	270.00
NITZSCHIA DENTICULA	90.00	60.00
NITZSCHIA FONTICOLA	60.00	
NITZSCHIA FRUSTULUM	350.00	1050.00
NITZSCHIA HOLSATICA	30.00	
NITZSCHIA LATENS		30.00
NITZSCHIA PALEA	420.00	270.00
SURIRELLA OVALIS	30.00	
EUGLENOPHYTA		
EUGLENA SPP		60.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	240.00	330.00

2.4.2.726

APPENDIX E-8-2 (Continued)

SITE = 1A

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ULOTHRIX SPP		2.40
STIGEOCLONIUM SPP		.10
CHLOROPHYTA I	96.00	150.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA	6.00	
MERIDION CIRCULARE		6.00
FRAGILARIA VAUCHERIAE		18.00
SYNEDRA AMPHICEPHALA	450.00	600.00
ACHNANTHES MINUTISSIMA	24.00	24.00
NAVICULA ARVENSIS		12.00
NAVICULA CRYPTOCEPHALA	72.00	72.00
NAVICULA CUSPIDATA		6.00
NAVICULA PELLICULOSA	60.00	90.00
NAVICULA PUPULA	6.00	
NAVICULA SALINARUM VAR. INTERMEDIA	6.00	
NAVICULA SP 2	24.00	36.00
CALONEIS AMPHISBAENA	6.00	
CALONEIS BACILLUM		6.00

2.4.2.727

APPENDIX E-8-2 (Continued)

SITE = 1R

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
PINNULARIA BREBISSONII	6.00	6.00
CYMBELLA MICROCEPHALA		6.00
GOMPHONEMA INTRICATUM	6.00	6.00
HANTZSCHIA AMPHIOXYS	6.00	
NITZSCHIA ACICULARIS	570.00	990.00
NITZSCHIA CAPITELLATA	42.00	132.00
NITZSCHIA DENTICULA	6.00	24.00
NITZSCHIA FRUSTULUM	96.00	78.00
NITZSCHIA HULSATICA		12.00
NITZSCHIA LATENS	12.00	18.00
NITZSCHIA LINEARIS	12.00	30.00
NITZSCHIA PALEA	48.00	48.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA		18.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	702.00	750.00

2.4.2.728

APPENDIX E-8-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	48.00	
OSCILLATORIA TENUIS	.24	12.00
SCHIZOTHRIX CALCICOLA	30.00	54.00
ANABAENA SPP		24.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	6.00	.24
CHLOROPHYTA I	102.00	258.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	12.00	6.00
CYCLOTELLA MENEGHINIANA	12.00	24.00
SYNEDRA AMPHICEPHALA	60.00	66.00
COCCONEIS PEDICULUS		6.00
ACHNANTHES MINUTISSIMA	24.00	18.00
RHOICOSPHENIA CURVATA	12.00	12.00
PLEUROSIGMA DELICATULUM	6.00	6.00
NAVICULA ARVENSIS	6.00	

2.4.2.729

APPENDIX E-8-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	78.00	114.00
NAVICULA PELLICULOSA	12.00	
NAVICULA SALINARUM VAR. INTERMEDIA	12.00	18.00
NAVICULA VIRIDULA	30.00	
NAVICULA SP 2	48.00	6.00
CALONEIS BACILLUM	12.00	12.00
CALONEIS VENTRICOSA	6.00	
CYMBELLA SPP	6.00	6.00
AMPHIPROPA ALATA		6.00
NANTZSCHIA AMPHIOXYS	18.00	
NITZSCHIA ACICULARIS	84.00	210.00
NITZSCHIA APICULATA		30.00
NITZSCHIA CAPITELLATA	12.00	24.00
NITZSCHIA FRUSTULUM	96.00	78.00
NITZSCHIA HULSATICA	108.00	132.00
NITZSCHIA LINEARIS	18.00	24.00
NITZSCHIA PALEA	24.00	42.00
SURIRELLA OVATA	42.00	66.00
EUGLENOPHYTA		
EUGLENA SPP	18.00	42.00

2.4.2.730

APPENDIX E-8-2 (Continued)

SITE = 19

TAXON	REP A	REP B
	(CELLS/ML)	
CRYPTOPHYTA		
CRYPTOMONAS EROSA	60.00	24.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	84.00	102.00

2.4.2.731

APPENDIX E-8-2 (Continued)

SITE = 20

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	33.00	6.00
CHLOROPHYTA		
STIGEOCLONIUM SPP		9.00
CHLOROPHYTA I	54.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	42.00	9.00
CYCLOTELLA MENEGHINIANA	87.00	51.00
STEPHANODISCUS ASTRAEA	3.00	
STEPHANODISCUS TENUIS		6.00
DIATOMA HIEMALE		3.00
SYNEDRA AMPHICEPHALA	39.00	30.00
SYNEDRA MINUSCULA	3.00	
SYNEDRA PULCHELLA	102.00	42.00
ACHNANTHES MINUTISSIMA	72.00	48.00
GYROSIGMA ACUMINATUM		3.00
NAVICULA CRYPTOCEPHALA	12.00	60.00

2.4.2.732

APPENDIX E-8-2 (Continued)

CELL = 20

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CUSPIDATA		3.00
NAVICULA GREGARIA	9.00	
NAVICULA PELLICULOSA	12.00	
NAVICULA SALINARUM VAR. INTERMEDIA	9.00	
NAVICULA VIRIDULA	9.00	
NAVICULA SP 2		9.00
PINNULARIA BREBISSONII	3.00	
AMPHORA OVALIS	3.00	
AMPHORA OVALIS VAR. PEDICULUS	6.00	
CYMBELLA PUSILLA	6.00	6.00
GOMPHONEMA INTRICATUM	12.00	
GOMPHONEMA OLIVACEUM		3.00
AMPHIPRORA ALATA	3.00	
NITZSCHIA ANGUSTATA		3.00
NITZSCHIA APICULATA	12.00	
NITZSCHIA CAPITELLATA	3.00	27.00
NITZSCHIA FRUSTULUM	33.00	21.00
NITZSCHIA HUSSATICA	507.00	405.00
NITZSCHIA LATENS	12.00	6.00
NITZSCHIA LINEARIS	3.00	3.00

2.4.2.733

APPENDIX E-8-2 (Continued)

SITE = 20

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA PALEA	18.00	21.00
SURIRELLA OVATA	12.00	3.00
EUGLENOPHYTA		
EUGLENA SPP	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	54.00	33.00

2.4.2.734

APPENDIX E-8-2 (Continued)

SITE = 21

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ANKISTRODESMUS FALCATUS	12.00	
CHLOROPHYTA I	54.00	21.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	33.00	9.00
CYCLOTELLA MENEGHINIANA	69.00	51.00
DIATOMA HIEMALE	39.00	
SYNEDRA AMPHICEPHALA	36.00	33.00
SYNEDRA PULCHELLA	66.00	36.00
SYNEDRA ULNA		3.00
COCCONEIS PLACENTULA	3.00	
ACHNANTHES LANCEOLATA	3.00	36.00
ACHNANTHES MINUTISSIMA	45.00	
GYROSIGMA ACUMINATUM		3.00
NAVICULA CRYPTOCEPHALA		36.00
NAVICULA SALINARUM	6.00	
NAVICULA VIRIDULA	9.00	6.00
CALONEIS BACILLUM		3.00
CYMBELLA AFFINIS		3.00

2.4.2.735

APPENDIX E-8-2 (Continued)

SITE = 21

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSUPHYTA		
CYMBELLA PUSILLA	18.00	
CYMBELLA SPP		21.00
GOMPHONEMA INTRICATUM	15.00	
CYLINDROTHECA GRACILIS	3.00	3.00
NITZSCHIA APICULATA	6.00	
NITZSCHIA CAPITELLATA	6.00	27.00
NITZSCHIA FRUSTULUM	54.00	18.00
NITZSCHIA HULSATICA	516.00	363.00
NITZSCHIA LATENS		6.00
NITZSCHIA PALEA	18.00	9.00
SURIRELLA OVATA	21.00	12.00
MICROFLACELLATES		
FLAGELLATE UNIDENTIFIED	36.00	12.00

2.4.2.736

APPENDIX E-8-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CHROOCOCCUS DISPERSUS	174.00	24.00
SCHIZOTHRIX CALCICOLA	3.00	
CALOTHRIX SPP	3.00	
CHLOROPHYTA		
ANKISTRODESMUS FALCATUS	3.00	
SPIROGYRA SPP	.50	
CHLOROPHYTA I	15.00	
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	24.00	27.00
CYCLOTELLA MENEGHINIANA	435.00	315.00
MERIDION CIRCULARE	3.00	
FRAGILARIA VAUCHERIAE	3.00	9.00
SYNEDRA AMPHICEPHALA		36.00
SYNEDRA PULCHELLA	93.00	84.00
SYNEDRA ULNA	6.00	6.00
ACHNANTHES LANCEOLATA		3.00

2.4.2.737

APPENDIX E-8-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
ACHNANTHES MINUTISSIMA	27.00	45.00
MASTOGLOIA SMITHII		3.00
GYROSIGMA ACUMINATUM	3.00	6.00
PLEUROSIGMA DELICATULUM		.06
NAVICULA CRYPTOCEPHALA	99.00	36.00
NAVICULA CUSPIDATA	.02	
NAVICULA MUTICA	21.00	9.00
NAVICULA SALINARUM	6.00	3.00
NAVICULA VIRIDULA	15.00	15.00
NAVICULA SP 1	12.00	3.00
NAVICULA SP 2	6.00	3.00
PINNULARIA BOREALIS	3.00	9.00
AMPHORA COFFEIFORMIS		3.00
CYMBELLA PUSILLA	42.00	24.00
GOMPHONEMA INTRICATUM	9.00	15.00
GOMPHONEMA LANCEOLATUM	12.00	
GOMPHONEMA PARVULUM		3.00
AMPHIPRORA ALATA	6.00	9.00
CYLINDROTHECA GRACILIS		6.00
NANTZSCHIA AMPHIOXYS	21.00	6.00

2.4.2.738

APPENDIX E-8-2 (Continued)

SITE = 22

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA ACICULARIS	3.00	
NITZSCHIA APICULATA	3.00	3.00
NITZSCHIA CAPITELLATA		12.00
NITZSCHIA FRUSTULUM	36.00	48.00
NITZSCHIA GRACILIS	9.00	
NITZSCHIA HUSATICA	147.00	129.00
NITZSCHIA HUNGARICA		3.00
NITZSCHIA LATENS		3.00
NITZSCHIA LINEARIS	6.00	12.00
NITZSCHIA PALEA	30.00	6.00
NITZSCHIA VERMICULARIS	3.00	3.00
SURIRELLA OVATA	30.00	18.00
SURIRELLA OVALIS	.02	3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	45.00	

2.4.2.739

APPENDIX E-8-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	3.00	3.00
SCHIZOTHRIX CALCICOLA	9.00	6.00
CALOTHRIX SPP		9.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	.18	.70
DUCYSTIS PUSILLA	24.00	
CHLOROPHYTA 1	42.00	24.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	18.00	6.00
CYCLOTELLA MENEGHINIANA		6.00
DIATOMA VULGARE	36.00	102.00
FRAGILARIA VAUCHERIAE	3.00	9.00
SYNEDRA ULNA		9.00
COCCONEIS PEDICULUS	3.00	12.00
ACHNANTHES MINUTISSIMA	15.00	9.00
GYROSIGMA ACUMINATUM	.04	

APPENDIX E-8-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	51.00	36.00
NAVICULA PUPULA		3.00
NAVICULA SALINARUM VAR. INTERMEDIA	9.00	6.00
NAVICULA SUBHAMULATA		3.00
NAVICULA TRIPUNCTATA	3.00	
NAVICULA VIRIDULA	108.00	162.00
CALONEIS AMPHISBAENA		.02
AMPHORA OVALIS VAR. PEDICULUS	3.00	9.00
CYMBELLA AFFINIS	27.00	21.00
CYMBELLA VENTRICOSA	15.00	18.00
GOMPHONEMA INTRICATUM	24.00	6.00
GOMPHONEMA LANCEOLATUM		6.00
GOMPHONEMA OLIVACEUM	21.00	36.00
GOMPHONEMA PARVULUM	3.00	
GOMPHONEMA VENTRICOSUM	18.00	30.00
EPITHEMIA SUPEX	6.00	9.00
HANTZSCHIA AMPHIOXYS	3.00	
NITZSCHIA CAPITELLATA		3.00
NITZSCHIA DENTICULA	3.00	
NITZSCHIA DISSIPATA	60.00	45.00

2.4.2.741

APPENDIX E-8-2 (Continued)

SITE = 23

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA FRUSTULUM	36.00	63.00
NITZSCHIA GRACILIS	6.00	
NITZSCHIA HOLSATICA	12.00	15.00
NITZSCHIA PALEA	6.00	3.00
CYMATOPLEURA SOLEA	.04	.02
SURIRELLA OVATA	3.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	30.00	15.00

APPENDIX E-8-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CALOTHRIX SPP		3.00
CHLOROPHYTA		
STIGEOCLONIUM SPP		3.00
CLADOPHORA SPP		3.00
CHLOROPHYTA I		72.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	3.00	21.00
CYCLOTELLA MENEGHINIANA	9.00	12.00
STEPHANODISCUS TENUIS	3.00	
DIATOMA VULGARE	138.00	147.00
FRAGILARIA LEPTOSTAURON		9.00
FRAGILARIA PINNATA	6.00	9.00
FRAGILARIA VAUCHERIAE	6.00	3.00
HANNAEA ARCUS	6.00	
SYNEDRA AMPHICEPHALA	9.00	
SYNEDRA ULNA	9.00	9.00

2.4.2.743

APPENDIX E-8-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
COCCONEIS PEDICULUS	15.00	9.00
COCCONEIS PLACENTULA	3.00	
ACHNANTHES MINUTISSIMA	9.00	18.00
GYROSIGMA ACUMINATUM	.02	.10
NAVICULA ARVENSIS	3.00	
NAVICULA CRYPTOCEPHALA	102.00	93.00
NAVICULA PELLICULOSA		6.00
NAVICULA SALINARUM VAR. INTERMEDIA	42.00	36.00
NAVICULA SUBHAMULATA		6.00
NAVICULA TRIPUNCTATA	6.00	6.00
NAVICULA VIRIDULA	81.00	102.00
CALONEIS AMPHISBAENA	.16	3.00
AMPHORA OVALIS	3.00	
AMPHORA OVALIS VAR. PEDICULUS	12.00	3.00
CYMBELLA AFFINIS	3.00	39.00
CYMBELLA MEXICANA	.08	.14
CYMBELLA PROSTRATA		3.00
CYMBELLA SINUATA	3.00	9.00
CYMBELLA VENTRICOSA	6.00	15.00
DIDYMOSPHENIA GEMINATA		.02

2.4.2.744

APPENDIX E-8-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA INTRICATUM	45.00	15.00
GOMPHONEMA OLIVACEUM	33.00	33.00
GOMPHONEMA PARVULUM		3.00
GOMPHONEMA VENTRICOSUM	33.00	27.00
GOMPHONEIS HERCULEANA	.02	
EPITHEMIA SOREX	12.00	18.00
CYLINDROTHECA GRACILIS	3.00	
NITZSCHIA ACICULARIS	3.00	
NITZSCHIA APICULATA	6.00	
NITZSCHIA CAPITELLATA	3.00	
NITZSCHIA DISSIPATA	78.00	30.00
NITZSCHIA FRUSTULUM	18.00	36.00
NITZSCHIA GRACILIS	3.00	
NITZSCHIA HUSSATICA	75.00	54.00
NITZSCHIA PALEA		6.00
NITZSCHIA SIGMOIDEA	.02	
NITZSCHIA VERMICULARIS	6.00	
CYMATOPLEURA ELLIPTICA	.02	
CYMATOPLEURA SOLEA	.18	.14
SURIRELLA OVATA	3.00	18.00

2.4.2.745

APPENDIX E-8-2 (Continued)

SITE = 24

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
SURIRELLA OVALIS		.02
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	9.00	30.00

APPENDIX E-8-2 (Continued)

SITE = 25

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	6.00	3.00
SCHIZOTHRIX CALCICOLA	18.00	
CALLOTHRIX SPP	15.00	30.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	6.00	
ANKISTRODESMUS FALCATUS		3.00
CHLOROPHYTA 1	66.00	36.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	18.00	9.00
CYCLOTELLA MENEGHINIANA	3.00	
STEPHANODISCUS ASTRAEA	3.00	
DIATOMA VULGARE	186.00	105.00
FRAGILARIA CROTONENSIS	3.00	
FRAGILARIA LEPTOSTAURON	9.00	
FRAGILARIA PINNATA		3.00
FRAGILARIA VAUCHERIAE	15.00	3.00

2.4.2.747

APPENDIX E-8-2 (Continued)

SITE = 2

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
HANNAEA ARCUS	3.00	
SYNEDRA AMPHICEPHALA		3.00
SYNEDRA ULNA	12.00	
CYCLONEIS PEDICULUS	6.00	3.00
ACHNANTHES LANCEOLATA	3.00	3.00
ACHNANTHES MINUTISSIMA	9.00	18.00
PHAICOSPHENIA CURVATA	3.00	
NAVICULA ARVENSIS	3.00	3.00
NAVICULA CRYPTOCEPHALA	78.00	39.00
NAVICULA PELLICULOSA	6.00	
NAVICULA SALINARUM		9.00
NAVICULA SALINARUM VAR. INTERMEDIA	48.00	
NAVICULA TRIPUNCTATA	3.00	3.00
NAVICULA VIRIDULA	129.00	51.00
NAVICULA SP 2	3.00	
CALONEIS AMPHISBAENA	.04	.04
AMPHORA OVALIS VAR. PEDICULUS	9.00	9.00
CYMBELLA AFFINIS	30.00	18.00
CYMBELLA SINUATA		6.00
CYMBELLA VENTRICOSA	15.00	

2.4.2.748

APPENDIX E-8-2 (Continued)

SITE = 25

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
GOMPHONEMA INTRICATUM	21.00	12.00
GOMPHONEMA LANCEOLATUM		6.00
GOMPHONEMA OLIVACEUM	15.00	12.00
GOMPHONEMA PARVULUM		9.00
GOMPHONEMA VENTRICOSUM	60.00	60.00
EPITHEMIA SOREX	45.00	
NITZSCHIA ACICULARIS		3.00
NITZSCHIA APICULATA	3.00	
NITZSCHIA CAPITELLATA	3.00	3.00
NITZSCHIA DISSIPATA	36.00	27.00
NITZSCHIA FRUSTULUM	54.00	45.00
NITZSCHIA GRACILIS	3.00	3.00
NITZSCHIA HUNSATICA	42.00	30.00
NITZSCHIA LINEARIS	3.00	3.00
NITZSCHIA PALEA	9.00	
CYMATOPLEURA SOLEA	.06	.08
SURIRELLA OVATA	15.00	9.00
EUGLENOPHYTA		
EUGLENA SPP		6.00

2.4.2.749

APPENDIX E-8-2 (Continued)

SITE = 25

TAXON	REP A	REP B
	(CELLS/ML)	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	36.00	21.00

APPENDIX E-8-2 (Continued)

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
STIGEOCLONIUM SPP		.26
SCENEDESMUS QUADRICAUDA	36.00	
MOUGEOTIA SPP	.52	
CHLOROPHYTA 1	381.00	
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA		6.00
DIATOMA VULGARE	66.00	126.00
FRAGILARIA CONSTRUENS	45.00	12.00
FRAGILARIA LEPTOSTAURON	6.00	3.00
FRAGILARIA PINNATA	12.00	3.00
FRAGILARIA VAUCHERIAE		6.00
SYNEDRA ULNA		6.00
COCCONEIS PEDICULUS		12.00
COCCONEIS PLACENTULA	6.00	6.00
ACHNANTHES MINUTISSIMA	36.00	12.00
PHOICOSPHENIA CURVATA		6.00
AMPHIPLEURA PELLUCIDA	3.00	
GYROSIGMA ACUMINATUM	.04	.08

APPENDIX E-8-2 (Continued)

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	45.00	42.00
NAVICULA ELGINENSIS		3.00
NAVICULA MUTICA	3.00	
NAVICULA PELLICULOSA	3.00	
NAVICULA PUPULA		3.00
NAVICULA SALINARUM VAR. INTERMEDIA	24.00	12.00
NAVICULA SUBHAMULATA	6.00	
NAVICULA VIRIDULA	66.00	90.00
NAVICULA SP 1		3.00
CALONEIS AMPHISBAENA	.12	3.14
AMPHORA OVALIS	3.00	
AMPHORA OVALIS VAR. PEDICULUS	3.00	
CYMBELLA AFFINIS	18.00	18.00
CYMBELLA MEXICANA	.06	.10
CYMBELLA VENTRICOSA	9.00	6.00
GOMPHONEMA INTRICATUM	3.00	18.00
GOMPHONEMA OLIVACEUM	12.00	12.00
GOMPHONEMA VENTRICOSUM	18.00	12.00
EPITHEMIA SOREX	9.00	18.00
CYLINDROTHECA GRACILIS		3.00

2.4.2.752

APPENDIX E-8-2 (Continued)

SITE = 26

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA DISSIPATA	18.00	18.00
NITZSCHIA FRUSTULUM	15.00	15.00
NITZSCHIA GRACILIS		9.00
NITZSCHIA HULSATICA	27.00	39.00
NITZSCHIA PALEA		6.00
CYMATOPLEURA SOLEA	.02	
SURIRELLA OVATA	12.00	
EUGLENOPHYTA		
EUGLENA SPP		3.00
MICRO-FLAGELLATES		
FLAGELLATE UNIDENTIFIED	9.00	30.00

2.4.2.753

APPENDIX E-8-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	3.00	9.00
CHLOROPHYTA		
STIGEOCLONIUM SPP	.20	
ANKISTRODESMUS FALCATUS		3.00
CHLOROPHYTA I	63.00	36.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA		3.00
DIATOMA VULGARE	93.00	84.00
FRAGILARIA LEPTOSTAURON	18.00	
SYNEDRA ULNA	3.00	
COCCONEIS PEDICULUS	6.00	3.00
ACHNANTHES LANCEOLATA	6.00	
ACHNANTHES MINUTISSIMA	21.00	9.00
PHOTODISPHENIA CURVATA		6.00
NAVICULA CRYPTOCEPHALA	39.00	39.00
NAVICULA PELLICULOSA		3.00

2.4.2.754

APPENDIX E-8-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA SALINARUM	18.00	
NAVICULA SALINARUM VAR. INTERMEDIA		24.00
NAVICULA VIRIDULA	66.00	78.00
CALONEIS AMPHISBAENA		.02
AMPHORA OVALIS VAR. PEDICULUS	6.00	
CYMBELLA AFFINIS	18.00	21.00
CYMBELLA SINUATA		3.00
CYMBELLA VENTRICOSA	6.00	6.00
GOMPHONEMA INTRICATUM	6.00	3.00
GOMPHONEMA OLIVACEUM	6.00	30.00
GOMPHONEMA VENTRICOSUM	39.00	42.00
NITZSCHIA APICULATA		3.00
NITZSCHIA DISSIPATA	6.00	
NITZSCHIA FRUSTULUM		12.00
NITZSCHIA HOLSATICA	12.00	9.00
NITZSCHIA PALEA	6.00	12.00
CYMATOPLEURA SOLEA		.02
SURIRELLA OVATA	9.00	6.00
EUGLENOPHYTA		
EUGLENA SPP		6.00

2.4.2.755

APPENDIX E-8-2 (Continued)

SITE = 27

TAXON	REP A	REP B
	(CELLS/ML)	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	21.00	15.00

2.4.2.756

APPENDIX E-8-2 (Continued)

SITE = 28

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS	6.00	3.00
CHLOROPHYTA		
STIGEOCLONIUM SPP		15.00
NOCYSTIS SPP		24.00
SCENEDESMUS QUADRICAUDA		12.00
CHLOROPHYTA I	54.00	57.00
CHRYSOPHYTA		
CHRYSIDIASTRUM OCELLATUM		3.00
THALASSIOSIRA FLUVIATILIS	3.00	
CYCLOTELLA MENEGHINIANA		3.00
STEPHANODISCUS ASTRAEA		3.00
DIATOMA VULGARE	108.00	120.00
FRAGILARIA LEPTOSTAURON		6.00
FRAGILARIA VAUCHERIAE		3.00
HANNAEA ARCUS		3.00
SYNEDRA ULNA	9.00	

2.4.2.757

APPENDIX E-8-2 (Continued)

SITE = 28

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CUCCONEIS PEDICULUS	24.00	9.00
ACHNANTHES LANCEOLATA		6.00
ACHNANTHES MINUTISSIMA	3.00	
GYRUSIGMA ACUMINATUM		.04
DIPLONEIS ELLIPTICA	3.00	
NAVICULA CRYPTOCEPHALA	48.00	63.00
NAVICULA SALINARUM VAR. INTERMEDIA	6.00	27.00
NAVICULA VIRIDULA	51.00	75.00
CALONEIS AMPHISBAENA		.02
AMPHORA OVALIS VAR. PEDICULUS	9.00	3.00
CYMBELLA AFFINIS	63.00	36.00
CYMBELLA SINUATA		6.00
CYMBELLA VENTRICOSA		12.00
GOMPHONEMA INTRICATUM	3.00	12.00
GOMPHONEMA OLIVACEUM	3.00	6.00
GOMPHONEMA VENTRICOSUM	33.00	33.00
GOMPHONEIS HERCULEANA	3.00	
EPITHEMIA SOREX	12.00	9.00
NITZSCHIA DISSIPATA	3.00	3.00
NITZSCHIA FRUSTULUM	6.00	3.00

2.4.2.758

APPENDIX E-8-2 (Continued)

SITE = 2P

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA HULSATICA	9.00	18.00
NITZSCHIA PALEA	9.00	9.00
SURIRELLA OVATA	6.00	9.00
EUGLENOPHYTA		
EUGLENA SPP	6.00	3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	30.00	36.00

2.4.2.759

APPENDIX E-8-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
STICHOCLONIUM SPP	.64	3.00
MOUGEOTIA SPP		3.00
CHLOROPHYTA I	27.00	30.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS		6.00
DIATOMA VULGARE	183.00	159.00
FRAGILARIA LEPTOSTAURON	6.00	
FRAGILARIA PINNATA		6.00
FRAGILARIA VAUCHERIAE	3.00	
SYNEDRA PULCHELLA	3.00	9.00
SYNEDRA ULNA	15.00	9.00
COCCONEIS PEDICULUS	6.00	6.00
COCCONEIS PLACENTULA	9.00	12.00
AMPHIPLEURA PELLUCIDA	9.00	
GYROSIGMA ACUMINATUM		.02
NAVICULA CRYPTOCEPHALA	66.00	45.00
NAVICULA CUSPIDATA		.02
NAVICULA MUTICA	3.00	

2.4.2.760

APPENDIX E-8-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA	3.00	
NAVICULA PUPULA	24.00	39.00
NAVICULA SALINARUM VAR. INTERMEDIA	6.00	18.00
NAVICULA TRIPUNCTATA	66.00	102.00
NAVICULA VIRIDULA	3.00	
NAVICULA SP 2	.02	.08
CALONEIS AMPHISBAENA	6.00	
AMPHORA OVALIS VAR. PEDICULUS	21.00	21.00
CYMBELLA AFFINIS	.02	.02
CYMBELLA MEXICANA	3.00	
CYMBELLA SINUATA	3.00	18.00
CYMBELLA VENTRICOSA	12.00	12.00
GOMPHONEMA INTRICATUM	21.00	33.00
GOMPHONEMA OLIVACEUM	24.00	54.00
GOMPHONEMA VENTRICOSUM	15.00	9.00
EPITHEMIA SOREX		3.00
HANTZSCHIA AMPHIOXYS	6.00	
NITZSCHIA APICULATA	3.00	12.00
NITZSCHIA DISSIPATA	6.00	30.00
NITZSCHIA FRUSTULUM	6.00	3.00
NITZSCHIA GRACILIS		

2.4.2.761

APPENDIX E-8-2 (Continued)

SITE = 29

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA HOLSATICA	18.00	21.00
NITZSCHIA PALEA	9.00	
CYMATOPLEURA SOLEA	.06	.04
SURIRELLA OVATA	9.00	3.00
CRYPTOPHYTA		
RHODOMONAS MINUTA	6.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	27.00	18.00

2.4.2.762

APPENDIX E-8-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
CYANOPHYTA I	21.00	
CHROOCOCCUS DISPERSUS		6.00
CHLOROPHYTA		
CRUCIGENIA TETRAPEDIA	14.00	6.00
CHLOROPHYTA I		22.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS		4.00
CYCLOTELLA MENEGHINIANA		2.00
DIATOMA VULGARE	68.00	148.00
FRAGILARIA CONSTRUENS	2.00	12.00
FRAGILARIA LEPTOSTAURON	6.00	6.00
FRAGILARIA PINNATA	3.00	
FRAGILARIA VAUCHERIAE	2.00	
SYNEDRA AMPHICEPHALA	2.00	2.00
SYNEDRA MINUSCULA		2.00
SYNEDRA ULNA		10.00

2.4.2.763

APPENDIX E-8-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
COCCONEIS PEDICULUS	6.00	10.00
COCCONEIS PLACENTULA	2.00	9.00
ACHNANTHES LANCEOLATA		2.00
ACHNANTHES MINUTISSIMA	8.00	
GYROSIGMA ACUMINATUM	.04	.02
DIPLONEIS PSEUDOVALIS		2.00
NAVICULA ARVENSIS		2.00
NAVICULA CRYPTOCEPHALA	18.00	82.00
NAVICULA PROTRACTA		2.00
NAVICULA PUPULA		2.00
NAVICULA SALINARUM VAR. INTERMEDIA	12.00	28.00
NAVICULA TRIPUNCTATA	6.00	16.00
NAVICULA VIRIDULA	32.00	63.00
NAVICULA SP 1	3.00	
CALONEIS AMPHISBAENA	.02	.08
CALONEIS BACILLUM	2.00	
AMPHORA OVALIS	2.00	
CYMBELLA AFFINIS	3.00	24.00
CYMBELLA MEXICANA		.04
CYMBELLA SINUATA	4.00	6.00

2.4.2.764

APPENDIX E-8-2 (Continued)

SITE = 30

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CYMBELLA VENTRICOSA	3.00	
GOMPHONEMA INTRICATUM	3.00	
GOMPHONEMA OLIVACEUM	21.00	21.00
GOMPHONEMA VENTRICOSUM	3.00	33.00
EPITHEMIA SOREX	3.00	8.00
RHOPALODIA GIBBERULA		2.00
CYLINDROTHECA GRACILIS	2.00	
NITZSCHIA APICULATA	2.00	
NITZSCHIA DISSIPATA	9.00	18.00
NITZSCHIA FRUSTULUM	10.00	
NITZSCHIA HOLSATICA		3.00
NITZSCHIA VERMICULARIS		.04
CYMATOPLEURA ELLIPTICA		.02
CYMATOPLEURA SOLEA	.02	.04
SURIRELLA OVATA	2.00	4.00
EUGLENOPHYTA		
EUGLENA SPP	2.00	3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	2.00	3.00

2.4.2.765

APPENDIX E-8-2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
ULOTHRIX SPP	3.00	
OOCYSTIS SPP	24.00	
SPIROGYRA SPP	.68	
CHLOROPHYTA I	39.00	27.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA		9.00
DIATOMA VULGARE	69.00	177.00
FRAGILARIA LEPTOSTAURON	3.00	12.00
FRAGILARIA VAUCHERIAE		3.00
SYNEDRA ANPHICEPHALA		9.00
SYNEDRA PULCHELLA	3.00	
SYNEDRA ULNA	3.00	3.00
COCCONEIS PLACENTULA		6.00
ACHNANTHES MINUTISSIMA	6.00	36.00
GYROSIGMA ACUMINATUM		.02
NAVICULA CRYPTOCEPHALA	15.00	66.00
NAVICULA SALINARUM VAR. INTERMEDIA	18.00	39.00
NAVICULA TRIPUNCTATA		3.00

2.4.2.766

APPENDIX E-8-2 (Continued)

SITE = 31

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA VIRIDULA	69.00	138.00
CALONEIS AMPHISBAENA		.06
CYMBELLA AFFINIS	3.00	36.00
CYMBELLA VENTRICOSA	3.00	3.00
GOMPHONEMA INTRICATUM		6.00
GOMPHONEMA OLIVACEUM		15.00
GOMPHONEMA PARVULUM		3.00
GOMPHONEMA VENTRICOSUM	54.00	189.00
EPITHEMIA SOREX	3.00	9.00
NITZSCHIA ACICULARIS		3.00
NITZSCHIA APICULATA	3.00	
NITZSCHIA DISSIPATA	12.00	6.00
NITZSCHIA HOLSATICA		6.00
NITZSCHIA LINEARIS		9.00
NITZSCHIA PALEA	6.00	24.00
CYMATOPLEURA SOLEA	.02	.02
SURIRELLA OVATA		3.00
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	15.00	24.00

2.4.2.767

APPENDIX E-8-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA SPP	4.00	
CHLOROPHYTA		
STIGEOCLONIUM SPP	4.00	
CRUCIGENIA TETRAPEDIA	6.00	
SPIROGYRA SPP	.60	1.00
CHLOROPHYTA 1	34.00	24.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	8.00	3.00
CYCLOTELLA MENEGHINIANA	6.00	24.00
DIATOMA VULGARE	44.00	153.00
FRAGILARIA CONSTRUENS	2.00	3.00
FRAGILARIA CROTONENSIS		3.00
FRAGILARIA LEPTOSTAURON	2.00	6.00
FRAGILARIA PINNATA		3.00
SYNEDRA PULCHELLA	9.00	36.00
SYNEDRA ULNA	2.00	

2.4.2.768

APPENDIX E-8-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
COCCONEIS PEDICULUS	2.00	6.00
COCCONEIS PLACENTULA	2.00	
ACHNANTHES MINUTISSIMA		6.00
NAVICULA CRYPTOCEPHALA	33.00	39.00
NAVICULA MUTICA		3.00
NAVICULA SALINARUM VAR. INTERMEDIA	10.00	45.00
NAVICULA TRIPUNCTATA	4.00	6.00
NAVICULA VIRIDULA	39.00	51.00
NAVICULA SP 1	4.00	
NAVICULA SP 2	2.00	
CALONEIS AMPHISBAENA	.02	3.00
AMPHORA OVALIS VAR. PEDICULUS		9.00
CYMBELLA AFFINIS	12.00	42.00
CYMBELLA MEXICANA		.06
CYMBELLA SINUATA		3.00
CYMBELLA VENTRICOSA	2.00	6.00
GOMPHONEMA INTRICATUM		6.00
GOMPHONEMA OLIVACEUM	12.00	18.00
GOMPHONEMA VENTRICOSUM	15.00	30.00
EPITHEMIA SUBLX	3.00	3.00

2.4.2.769

APPENDIX E-8-2 (Continued)

SITE = 32

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CYLINDROTHECA GRACILIS	2.00	
NITZSCHIA APICULATA	2.00	3.00
NITZSCHIA CAPITELLATA	2.00	
NITZSCHIA DISSIPATA	12.00	15.00
NITZSCHIA FRUSTULUM	2.00	12.00
NITZSCHIA GRACILIS	2.00	
NITZSCHIA HOLSATICA	14.00	9.00
NITZSCHIA VERMICULARIS		.02
CYMATOPLEURA SOLEA		.02
SURIRELLA OVATA	6.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	14.00	

2.4.2.770

APPENDIX E-8-2 (Continued)

SITE = 33

TAXON	REP A	REP B
	(CELLS/ML)	
CYANOPHYTA		
OSCILLATORIA TENUIS		6.00
OSCILLATORIA SPP	2.00	
SCHIZOTHRIX CALCICOLA		6.00
CHLOROPHYTA		
CLADOPHORA SPP		120.00
CHLOROPHYTA I	44.00	40.00
CHRYSOPHYTA		
DIATOMA VULGARE	296.00	164.00
FRAGILARIA CONSTRUENS	2.00	
FRAGILARIA PINNATA	8.00	
SYNEDRA PULCHELLA		4.00
SYNEDRA ULNA	18.00	2.00
COCCONEIS PEDICULUS	10.00	6.00
COCCONEIS PLACENTULA	2.00	
RHOICOSPHENIA CURVATA		2.00
GYROSIGMA ACUMINATUM		2.00

2.4.2.771

APPENDIX E-8-2 (Continued)

SITE = 33

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA CRYPTOCEPHALA	60.00	54.00
NAVICULA MUTICA	2.00	
NAVICULA SALINARUM VAR. INTERMEDIA	24.00	34.00
NAVICULA TRIPUNCTATA		8.00
NAVICULA VIRIDULA	98.00	82.00
CALONEIS AMPHISBAENA	2.00	2.00
CALONEIS BACILLUM		2.00
AMPHORA OVALIS VAR. PEDICULUS		6.00
CYMBELLA AFFINIS	40.00	10.00
CYMBELLA MEXICANA	2.00	2.00
CYMBELLA SPP		2.00
GOMPHONEMA INTRICATUM	14.00	4.00
GOMPHONEMA OLIVACEUM	22.00	12.00
GOMPHONEMA VENTRICOSUM	36.00	68.00
EPITHEMIA SOREX	22.00	26.00
NITZSCHIA DISSIPATA	34.00	
NITZSCHIA FRUSTULUM	2.00	4.00
NITZSCHIA HOLSATICA		4.00
NITZSCHIA LINEARIS		2.00
CYMATOPLEURA SOLEA	.06	

2.4.2.772

APPENDIX E-8-2 (Continued)

SITE = 33

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
SURIRELLA OVATA	4.00	
EUGLENOPHYTA		
EUGLENA SPP		2.00
CRYPTOPHYTA		
CRYPTOMONAS EROSA	2.00	
RHODOMONAS MINUTA	2.00	
MICROFLAGELLATES		
FLAGELLATE UNIDENTIFIED	4.00	

2.4.2.773

APPENDIX E-8-2 (Continued)

SITE = 34

TAXON	REP A (CELLS/ML)	REP B (CELLS/ML)
CYANOPHYTA		
OSCILLATORIA SPP		2.00
CHLOROPHYTA		
CLADOPHORA SPP		.60
CRUCIGENIA TETRAPEDIA	8.00	8.00
CLOSTERIUM SPP		.02
CHLOROPHYTA 1	20.00	10.00
CHRYSOPHYTA		
CYCLOTELLA MENEGHINIANA		4.00
DIATOMA VULGARE	208.00	478.00
FRAGILARIA CONSTRUENS		8.00
FRAGILARIA LEPTOSTAURON	2.00	2.00
SYNEDRA PULCHELLA	4.00	
SYNEDRA ULNA	6.00	
COCCONEIS PEDICULUS	4.00	12.00
COCCONEIS PLACENTULA	4.00	6.00
ACHNANTHES MINUTISSIMA	8.00	

2.4.2.774

APPENDIX E-8-2 (Continued)

SITE = 34

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
AMPHIPLEURA PELLUCIDA	2.00	
GYROSIGMA ACUMINATUM		.10
NAVICULA CRYPTOCEPHALA	56.00	72.00
NAVICULA SALINARUM VAR. INTERMEDIA		44.00
NAVICULA TRIPUNCTATA	18.00	6.00
NAVICULA VIRIDULA	114.00	162.00
CALONEIS AMPHISBAENA	2.00	.22
CALONEIS BACILLUM	2.00	
AMPHORA OVALIS VAR. PEDICULUS		10.00
CYMBELLA AFFINIS	34.00	
CYMBELLA MEXICANA		.10
CYMBELLA SINUATA		2.00
GOMPHONEMA INTRICATUM	2.00	4.00
GOMPHONEMA OLIVACEUM	22.00	
GOMPHONEMA VENTRICOSUM	56.00	76.00
EPITHEMIA SOREX	38.00	26.00
NITZSCHIA ACICULARIS		2.00
NITZSCHIA APICULATA	2.00	
NITZSCHIA DISSIPATA	38.00	42.00
NITZSCHIA HOLSATICA	8.00	

2.4.2.775

APPENDIX E-8-2 (Continued)

SITE = 34

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
CYMATOPLEURA SOLEA		2.00
SURIRELLA OVATA	2.00	4.00

2.4.2.776

APPENDIX E-8-2 (Continued)

SITE = 35

TAXON	REP A	REP B
	(CELLS/ML)	
CHLOROPHYTA		
STIGEOCLONIUM SPP		.64
CLADOPHORA SPP	1.90	
CLOSTERIUM SPP		.02
CHLOROPHYTA I	14.00	26.00
CHRYSOPHYTA		
THALASSIOSIRA FLUVIATILIS	2.00	
CYCLOTELLA MENEGHINIANA		2.00
DIATOMA VULGARE	156.00	166.00
FRAGILARIA CONSTRUENS		6.00
FRAGILARIA LEPTOSTAURON		2.00
SYNEDRA ULNA	22.00	10.00
COCCONEIS PEDICULUS	4.00	6.00
COCCONEIS PLACENTULA	10.00	2.00
ACHNANTHES LANCEOLATA	2.00	
ACHNANTHES MINUTISSIMA	4.00	6.00
RHOICOSPHENIA CURVATA	2.00	
NAVICULA CRYPTOCEPHALA	28.00	80.00
NAVICULA SALINARUM VAR. INTERMEDIA	34.00	44.00

2.4.2.777

APPENDIX E-8-2 (Continued)

SITE = 35

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NAVICULA TRIPUNCTATA	10.00	4.00
NAVICULA VIRIDULA	96.00	112.00
NAVICULA SP 1	4.00	
NAVICULA SP 2	4.00	2.00
CALONEIS AMPHISBAENA	.22	.18
CALONEIS BACILLUM	4.00	2.00
CALONEIS VENTRICOSA		2.00
AMPHORA OVALIS	2.00	
AMPHORA OVALIS VAR. PEDICULUS	6.00	2.00
CYMBELLA AFFINIS	36.00	100.00
CYMBELLA MEXICANA	.04	
CYMBELLA SINUATA		6.00
CYMBELLA VENTRICOSA	6.00	
GOMPHONEMA OLIVACEUM	12.00	14.00
GOMPHONEMA VENTRICOSUM	22.00	54.00
EPITHEMIA SOREX	26.00	42.00
NITZSCHIA AMPHIBIA		2.00
NITZSCHIA APICULATA	2.00	
NITZSCHIA DISSIPATA	40.00	26.00
NITZSCHIA FRUSTULUM	4.00	2.00

2.4.2.778

APPENDIX E-8-2 (Continued)

SITE = 35

TAXON	REP A	REP B
	(CELLS/ML)	
CHRYSOPHYTA		
NITZSCHIA HOLSATICA	4.00	
NITZSCHIA VERMICULARIS	.02	
CYMATOPLEURA SOLEA	2.00	.08
SURIRELLA OVATA	14.00	6.00

2.4.3 Zooplankton

2.4.3.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.3.1 of Progress Report 3 for specific objectives.

2.4.3.2 Methods

In accordance with the revised aquatic Scope-of-Work on April 2, 1975, zooplankton samples are taken with a small submersible pump at all stations. Other methods remain unchanged from Progress Report 2. See section 2.4.3.2 of Progress Report 2 for specific methods.

2.4.3.3 Results

Zooplankton taxa encountered in October 1975 collections are listed in Appendix E-9-1. A total of 72 taxa was observed in these samples. Data describing the distribution of these organisms are given in Appendix E-9-2. Centropyxis species, and ciliates dominated the Protozoa at all sections of the sampling area. The rotifer fauna at the headwater and the spring-brook stations on Tract C-a were generally composed of bdelloids. Contracted monogononts were the most common forms at the river stations. Rotifers, as in previous months, were much more diverse at Station 14 and the Yellow Creek stations than elsewhere, with Lepadella, Monstyla, Notholca and other littoral forms abundant. Crustacea occurring in October 1975 were similar to those found in August 1975. In October, Nauplii, Bryocamptus hiemalis and ostracods occurred at the headwater and spring-brook stations. Stations 14 and 19 - 22 exhibited a high diversity with several cyclopoids and cladocera abundant. Crustacea were rare in the White River.

2.4.3 - Zooplankton Data

RBOSP PROGRESS REPORT

APPENDIX E-9-1

ZOOPLANKTON TAXA OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-9-1

ZOOPLANKTON TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

PROTOZOA

Acanthocystis sp.
Amoeba proteus
Carchesium sp.
Centropyxis aculeata
Centropyxis arcelloides
Centropyxis constricta
Centropyxis ecornis
Cephalodella sp.
Chilodonella sp.
Chilodonella cucullula
Ciliates (unidentified)
Cyphoderia ampulla
Cyphoderia ampulla var. papillata
Didinium sp.
Difflugia sp.
Difflugia acuminata
Difflugia ecornis
Difflugia gramen
Difflugia lebes
Difflugia oblonga
Difflugia penardi
Difflugia smilion
Dileptus sp.
Epistylis sp.
Heleopera petricola
Heleopera rosea
Paramecium sp.
Podophrya sp.
Testacida sp.
Urocentrum turbo
Vaginicola sp.
Vorticella sp.
Zoothamnium sp.

ROTIFERA

Bdelloidea (unidentified)
Brachionus plicatilis
Cephalodella sp.
Cephalodella catellina
Cephalodella gibba

Collotheca sp.
Colurella adriatica
Colurella obtusa
Conochilus sp.
Euchlanis dilatata
Keratella cochlearis
Keratella quadrata
Lecane luna
Lecane nana
Lepadella patella
Monogonont (unidentified)
Monostyla sp.
Monostyla bulla
Monostyla closterocerca
Monostyla furcata
Monostyla lunaris
Notholca acuminata
Notholca squamula
Trichotria pocillum

GASTROTRICHIA
Chaetonotus sp.

TARDIGRADA
Macrobiotus sp.

ARTHROPODA

Crustacea
Amphipoda
Hyalella azteca
Cladocera
Alona circumfimbriata
Ceriodaphnia quadrangula
Chydorus sphaericus
Daphnia sp.
Pleuroxus aduncus
Simocephalus vetulus
Copepoda
Nauplii
Cyclopoid copepodites
Bryocamptus hiemalis
Bryocamptus hiemalis copepodite
Cyclops vernalis
Eucyclops agilis
Paracyclops fimbriatus poppei
Ostracoda (unidentified)

RBOSP PROGRESS REPORT

APPENDIX E-9-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-9-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]
(Data are expressed as organisms/m^3.)

	Stations									
	1		2		3		4		5	
Replicate:	A	B	A	B	A	B	A	B	A	B
PROTOZOA										
Acanthocystis sp.										
Amoeba proteus										
Carchesium sp.										
Centropyxis aculeata		400			200			600		600
Centropyxis arcelloides	400					400	1000	400	200	
Centropyxis constricta	2600	1000	1200	600	2600	800	2800	600	200	
Centropyxis ecornis		600		400		200		600		
Chilodonella sp.			600	600		200				
Chilodonella cucullula										
ciliates (unidentified)				3600	200	1000		600		
Cyphoderia ampulla				400			200	2000		200
Cyphoderia ampulla var. papillata								200		
Didinium sp.										
Difflugia spp.		400								
Difflugia acuminata										
Difflugia gramen			200							
Difflugia lebes										
Difflugia oblonga										
Difflugia smilion										200
Difflugia penardi										

[1]Stations 6, 10, 11, 15, 16, and 18 were dry at the time of sampling.

APPENDIX E-9-2 (Continued)

	Stations									
	1		2		3		4		5	
Replicate:	A	B	A	B	A	B	A	B	A	B
Dileptus sp.										
Epistylis sp.					200					
Heleopera petricola	200									
Heleopera rosea		200								
Paramecium sp.				200		400		200		
Podophrya sp.										
testacida (unidentified)										
Urocentrum turbo										
Vaginicola sp.										
Vorticella sp.			1200	2000	200		400		400	
Zoothamnium sp.										
ROTIFERA										
bdelloidea (unidentified)	800	400	1000	3200	200	1600	200	1400	200	
Brachionus plicatilis	200	400								
Cephalodella sp.										
Cephalodella catellina										
Cephalodella gibba	4000		1000							
Collotheca sp.										
Colurella adriatica	200									
Colurella obtusa										
Conochilus sp.										
Euchlanis dilatata										
Keratella cochlearis										
Keratella quadrata	600									
Lecane luna										
Lecane nana										
Lepadella patella										200
monogonont (unidentified)		200		200		400				600
Monostyla sp.										

APPENDIX E-9-2 (Continued)

	Stations									
	1		2		3		4		5	
Replicate:	A	B	A	B	A	B	A	B	A	B
Monostyla bulla										400
Monostyla closterocerca										
Monostyla furcata										
Monostyla lunaris									200	200
Notholca acuminata										
Notholca squamula										
Trichotria pocillum		2400								
GASTROTRICHIA										
Chaetonotus sp.										200
TARDIGRADA										
Macrobiotus sp.								20		
ARTHROPODA										
Crustacea										
Amphipoda										
Hyalella azteca										
Cladocera									20	10
Alona circumfimbriata										
Ceriodaphnia quadrangula									80	60
Chydorus sphaericus										
Daphnia sp.									40	70
Pleuroxus aduncus										10
Simocephalus vetulus										
Copepoda										
Nauplii	200	200	1800	3800	600	400	1200	2800	200	1200
Cyclopoid copepodites									50	250
Bryocamptus hiemalis		30	30	230	30		60	190		10

APPENDIX E-9-2 (Continued)

	Stations									
	1		2		3		4		5	
Replicate:	A	B	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites		10		10		10	10	30		
Cyclops vernalis									10	70
Eucyclops agilis										10
Paracyclops fimbriatus poppei										
Ostracoda (unidentified)	10	60				10	70	260	10	60

APPENDIX E-9-2 (Continued)

	Stations									
	7		8		9		12		13	
Replicate:	A	B	A	B	A	B	A	B	A	B
PROTOZOA										
Acanthocystis sp.										
Amoeba proteus							200			
Carchesium sp.										
Centropyxis aculeata	400	400	400	400	200	600			800	400
Centropyxis arcelloides	1000	400	400					200		600
Centropyxis constricta	3600	1400	1000	1200	2600	3400			1000	1000
Centropyxis ecornis		400		200		1200				400
Chilodonella sp.										
Chilodonella cucullula										
ciliates (unidentified)		200					200		200	
Cyphoderia ampulla	600	800			200	200			200	
Cyphoderia ampulla var. papillata										
Didinium sp.										
Difflugia spp.										
Difflugia acuminata										
Difflugia gramen										
Difflugia lebes										
Difflugia oblonga										
Difflugia smilion										
Difflugia penardi										

APPENDIX E-9-2 (Continued)

	Stations									
	7		8		9		12		13	
Replicate:	A	B	A	B	A	B	A	B	A	B
Dileptus sp.										
Epistylis sp.										
Heleopera petricola										
Heleopera rosea										
Paramecium sp.									200	
Podophrya sp.										
testacida (unidentified)										
Urocentrum turbo										
Vaginicola sp.				800						
Vorticella sp.	600						200			
Zoothamnium sp.										
ROTIFERA										
bdelloidea (unidentified)	200	200	200	200	800	1200	2800	2600	200	
Brachionus plicatilis										
Cephalodella sp.										
Cephalodella catellina										
Cephalodella gibba										
Collotheca sp.										
Colurella adriatica					200					
Colurella obtusa										
Conochilus sp.										
Euchlanis dilatata										
Keratella cochlearis										
Keratella quadrata									200	
Lecane luna										
Lecane nana										
Lepadella patella	200				200					
monogonont (unidentified)							200			400
Monostyla sp.										

APPENDIX E-9-2 (Continued)

	Stations									
	7		8		9		12		13	
Replicate:	A	B	A	B	A	B	A	B	A	B
Monostyla bulla										
Monostyla closterocerca										
Monostyla furcata										
Monostyla lunaris										
Notholca acuminata										
Notholca squamula										
Trichotria pocillum										
GASTROTRICHIA										
Chaetonotus sp.										
TARDIGRADA										
Macrobiotus sp.				70						
ARTHROPODA										
Crustacea										
Amphipoda										
Hyalella azteca										
Cladocera										
Alona circumfimbriata										
Ceriodaphnia quadrangula										
Chydorus sphaericus										
Daphnia sp.										
Pleuroxus aduncus										
Simocephalus vetulus										
Copepoda										
Nauplii	200		800	2600	200					200
Cyclopoid copepodites										
Bryocamptus hiemalis		10	20	300					10	10

APPENDIX E-9-2 (Continued)

	Stations									
	7		8		9		12		13	
Replicate:	A	B	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites			10	130						
Cyclops vernalis										10
Eucyclops agilis		20								
Paracyclops fimbriatus poppei										30
Ostracoda (unidentified)	730	830	70	260	810	1140	60			

APPENDIX E-9-2 (Continued)

	Stations									
	14		17		19		20		21	
Replicate:	A	B	A	B	A	B	A	B	A	B
PROTOZOA										
Acanthocystis sp.	200									
Amoeba proteus										
Carchesium sp.										
Centropyxis aculeata									200	200
Centropyxis arcelloides									200	
Centropyxis constricta							1200	5000	3000	1800
Centropyxis ecornis								200	800	200
Chilodonella sp.										
Chilodonella cucullula			1000							
ciliates (unidentified)	200	400	3000	1000		200	600	200	200	600
Cyphoderia ampulla										
Cyphoderia ampulla var. papillata										
Didinium sp.										
Difflugia spp.			10000	6000	200	200	200	600		200
Difflugia acuminata									200	
Difflugia gramen			1000							
Difflugia lebes										
Difflugia oblonga										
Difflugia smilion										
Difflugia penardi										

APPENDIX E-9-2 (Continued)

	Stations									
	14		17		19		20		21	
Replicate:	A	B	A	B	A	B	A	B	A	B
Dileptus sp.										
Epistylis sp.										
Heleopera petricola										
Heleopera rosea										
Paramecium sp.										
Podophrya sp.										
testacida (unidentified)							200			
Urocentrum turbo			1000							
Vaginicola sp.										
Vorticella sp.					200					
Zoothamnium sp.										
ROTIFERA										
bdelloidea (unidentified)	30600	19800	15000	5000	600		400		400	
Brachionus plicatilis										
Cephalodella sp.										
Cephalodella catellina										
Cephalodella gibba				1000						200
Collotheca sp.	1800	400			800					
Colurella adriatica							400		200	
Colurella obtusa										
Conochilus sp.						200		200		
Euchlanis dilatata	9800	4400		3000		200				
Keratella cochlearis										
Keratella quadrata										
Lecane luna	4200	2200								
Lecane nana					400	200				
Lepadella patella	12600	6600		1000	2600	1200	800			
monogonont (unidentified)	1000	400	13000	23000		400		200		
Monostyla sp.										

APPENDIX E-9-2 (Continued)

	Stations									
	14		17		19		20		21	
Replicate:	A	B	A	B	A	B	A	B	A	B
Monostyla bulla	2400	1200			4400	1800				
Monostyla closterocerca						200				
Monostyla furcata										
Monostyla lunaris	1400	600					200		800	200
Notholca acuminata					400					
Notholca squamula		200				200				
Trichotria pocillum										
GASTROTRICHIA										
Chaetonotus sp.	600	200			400	400				
TARDIGRADA										
Macrobiotus sp.										
ARTHROPODA										
Crustacea										
Amphipoda					10					
Hyalella azteca										
Cladocera	20				110	970	50	60	10	
Alona circumfimbriata	60	20								
Ceriodaphnia quadrangula	530	190		500	10					
Chydorus sphaericus										
Daphnia sp.		20	500		180	70	150	180	30	90
Pleuroxus aduncus				500	490	200	20	10	10	
Simocephalus vetulus										
Copepoda		200			10800	2200	1800	800	1000	600
Nauplii					2030	610	650	750	310	360
Cyclopoid copepodites	20									
Bryocamptus hiemalis										

APPENDIX E-9-2 (Continued)

	Stations									
	14		17		19		20		21	
Replicate:	A	B	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites					50	10				
Cyclops vernalis	10				30	80	700	460	190	260
Eucyclops agilis	10									
Paracyclops fimbriatus poppei										
Ostracoda (unidentified)	60	20		1000	10				10	10

APPENDIX E-9-2 (Continued)

	Stations									
	22		23		24		25		26	
Replicate:	A	B	A	B	A	B	A	B	A	B
PROTOZOA										
Acanthocystis sp.										
Amoeba proteus										
Carchesium sp.				400						400
Centropyxis aculeata	200		1200	1800	2400	600	600	800	2400	1200
Centropyxis arcelloides			200		800		600	200		400
Centropyxis constricta		200	1000	1600	800	1400	1600	1400	4000	2400
Centropyxis ecornis			1800	200	1600	400	3400	800		200
Chilodonella sp.										
Chilodonella cucullula										
ciliates (unidentified)	600	1200		1800			1000	600		800
Cyphoderia ampulla								200		200
Cyphoderia ampulla var. papillata										
Didinium sp.			200							
Difflugia spp.								200		
Difflugia acuminata			200				200			
Difflugia gramen										200
Difflugia lebes										
Difflugia oblonga										
Difflugia smilion										
Difflugia penardi										

APPENDIX E-9-2 (Continued)

	Stations									
	22		23		24		25		26	
Replicate:	A	B	A	B	A	B	A	B	A	B
Dileptus sp.			200							
Epistylis sp.							200		2800	
Heleopera petricola										
Heleopera rosea										
Paramecium sp.										
Podophrya sp.										
testacida (unidentified)										
Urocentrum turbo										
Vaginicola sp.										
Vorticella sp.				200	400		200			200
Zoothamnium sp.										
ROTIFERA										
bdelloidea (unidentified)				200	400				600	
Brachionus plicatilis			200	200			400	200		200
Cephalodella sp.		200								
Cephalodella catellina										200
Cephalodella gibba										
Collotheca sp.			200				400	200		200
Colurella adriatica				200						
Colurella obtusa				400						
Conochilus sp.										
Euchlanis dilatata										
Keratella cochlearis										
Keratella quadrata										
Lecane luna										
Lecane nana										
Lepadella patella			400	200					400	
monogonont (unidentified)		400	1400	600	200	400	800	600	200	1800
Monostyla sp.									200	200

APPENDIX E-9-2 (Continued)

	Stations									
	22		23		24		25		26	
Replicate:	A	B	A	B	A	B	A	B	A	B
Monostyla bulla										
Monostyla closterocerca					200		200	200		
Monostyla furcata										
Monostyla lunaris						200				
Notholca acuminata	600	200								
Notholca squamula										
Trichotria pocillum										
GASTROTRICHIA										
Chaetonotus sp.										
TARDIGRADA										
Macrobiotus sp.										
ARTHROPODA										
Crustacea										
Amphipoda										
Hyalella azteca										
Cladocera										
Alona circumfimbriata		20								
Ceriodaphnia quadrangula										
Chydorus sphaericus			10							
Daphnia sp.										
Pleuroxus aduncus		20			10					
Simocephalus vetulus	10	10								
Copepoda										
Nauplii	400	800		200						
Cyclopoid copepodites	190	210								
Bryocamptus hiemalis										

APPENDIX E-9-2 (Continued)

	Stations									
	22		23		24		25		26	
Replicate:	A	B	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites										
Cyclops vernalis		10								
Eucyclops agilis	110	60								
Paracyclops fimbriatus poppei									10	10
Ostracoda (unidentified)										

APPENDIX E-9-2 (Continued)

	Stations									
	27		28		29		30		31	
Replicate:	A	B	A	B	A	B	A	B	A	B
PROTOZOA										
Acanthocystis sp.										
Amoeba proteus										
Carchesium sp.				800						
Centropyxis aculeata	2400	1800	800	800	3000	1600	1200	1200	1400	200
Centropyxis arcelloides		200		600	200	400				200
Centropyxis constricta	800	800	200	200	800	800	800	600	200	400
Centropyxis ecornis	600	400	400	200	2000	400	1000	400	800	
Chilodonella sp.	200									
Chilodonella cucullula										
ciliates (unidentified)		800	1200	600	200	1200	200	600		800
Cyphoderia ampulla					200					
Cyphoderia ampulla var. papillata										
Didinium sp.										
Difflugia spp.	200		200				400			
Difflugia acuminata					200		200			
Difflugia gramen					200		200	200		
Difflugia lebes					400					
Difflugia oblonga						200				
Difflugia smilion										
Difflugia penardi				200						

APPENDIX E-9-2 (Continued)

	Stations									
	27		28		29		30		31	
Replicate:	A	B	A	B	A	B	A	B	A	B
Dileptus sp.							400			
Epistylis sp.										
Heleopera petricola										
Heleopera rosea										
Paramecium sp.										
Podophrya sp.										
testacida (unidentified)										
Urocentrum turbo										1200
Vaginicola sp.	600	200	400		1800	1200	200			
Vorticella sp.							600			
Zoothamnium sp.										
ROTIFERA										
bdelloidea (unidentified)	200	200				200	200	200	600	
Brachionus plicatilis			200	200	200					
Cephalodella sp.										
Cephalodella catellina										
Cephalodella gibba										
Collotheca sp.			200							
Colurella adriatica										
Colurella obtusa										
Conochilus sp.										
Euchlanis dilatata										
Keratella cochlearis										
Keratella quadrata										
Lecane luna										
Lecane nana					200					
Lepadella patella	600									
monogonont (unidentified)	400	1400	2200	600	1000	1600	400	1200	200	1000
Monostyla sp.										

APPENDIX #-9-2 (Continued)

	Stations									
	27		28		29		30		31	
Replicate:	A	B	A	B	A	B	A	B	A	B
Monostyla bulla	200					200				
Monostyla closterocerca										200
Monostyla furcata										
Monostyla lunaris			400		600	200				400
Notholca acuminata	200		200	200						
Notholca squamula			200		200	200				
Trichotria pocillum				200		400		200		
GASTROTRICHIA										
Chaetonotus sp.										
TARDIGRADA										
Macrobiotus sp.										
ARTHROPODA										
Crustacea										
Amphipoda										
Hyalella azteca										
Cladocera										
Alona circumfimbriata		10	10	40						
Ceriodaphnia quadrangula										
Chydorus sphaericus		40	10					10		10
Daphnia sp.							10			
Pleuroxus aduncus				10						
Simocephalus vetulus				10						
Copepoda										
Nauplii	200	200	1200	800						
Cyclopoid copepodites			110	350				10		10
Bryocamptus hiemalis										

APPENDIX E-9-2 (Continued)

	Stations									
	27		28		29		30		31	
Replicate:	A	B	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites										
Cyclops vernalis			220	210						
Eucyclops agilis										
Paracyclops fimbriatus poppei					10	10	10	30		
Ostracoda (unidentified)										

APPENDIX E-9-2 (Continued)

	Stations							
	32		33		34		35	
Replicate:	A	B	A	B	A	B	A	B
PROTOZOA								
Acanthocystis sp.								
Amoeba proteus								
Carchesium sp.								
Centropyxis aculeata	1600	200	1800	800	3000	2000	2200	800
Centropyxis arcelloides	200			200	1200		400	200
Centropyxis constricta	800		600		800	800	800	600
Centropyxis ecornis	600		600		1000	800	2000	200
Chilodonella sp.								
Chilodonella cucullula								
ciliates (unidentified)	400			2200	200	800	200	3200
Cyphoderia ampulla					200			
Cyphoderia ampulla var. papillata				200				
Didinium sp.						200		200
Difflugia spp.					600	200		
Difflugia acuminata	200						200	
Difflugia gramen	200		200					
Difflugia lebes	200	200			200			
Difflugia oblonga								
Difflugia smilion								
Difflugia penardi								

APPENDIX E-9-2 (Continued)

	Stations							
	32		33		34		35	
Replicate:	A	B	A	B	A	B	A	B
Dileptus sp.								
Epistylis sp.	400				2400		1200	
Heleopera petricola								
Heleopera rosea								
Paramecium sp.								
Podophrya sp.							200	
testacida (unidentified)								
Urocentrum turbo								
Vaginicola sp.								
Vorticella sp.	1000		200	1200	600		800	1400
Zoothamnium sp.								
ROTIFERA								
bdelloidea (unidentified)	800	200	600	200	800	200	800	200
Brachionus plicatilis								
Cephalodella sp.								
Cephalodella catellina								
Cephalodella gibba				200	200			
Collotheca sp.								
Colurella adriatica	200			200				200
Colurella obtusa					200			
Conochilus sp.								
Euchlanis dilatata								
Keratella cochlearis	200							
Keratella quadrata					200			
Lecane luna								
Lecane nana								
Lepadella patella	200	200	400		200	200		
monogonont (unidentified)	1000	1200	600	400	1200	1200	2200	400
Monostyla sp.								

APPENDIX E-9-2 (Continued)

	Stations							
	32		33		34		35	
Replicate:	A	B	A	B	A	B	A	B
Monostyla bulla	200	200	200					
Monostyla closterocerca		200	200		200	200		
Monostyla furcata								
Monostyla lunaris	200				200	200		
Notholca acuminata								
Notholca squamula								
Trichotria pocillum								200
GASTROTRICHIA								
Chaetonotus sp.								
TARDIGRADA								
Macrobiotus sp.								
ARTHROPODA								
Crustacea								
Amphipoda								
Hyalella azteca								
Cladocera								
Alona circumfimbriata								
Ceriodaphnia quadrangula								
Chydorus sphaericus	10	10						
Daphnia sp.								
Pleuroxus aduncus								
Simocephalus vetulus								
Copepoda								
Nauplii						200		
Cyclopoid copepodites								
Bryocamptus hiemalis								

APPENDIX E-9-2 (Continued)

	Stations							
	32		33		34		35	
Replicate:	A	B	A	B	A	B	A	B
Bryocamptus hiemalis copepodites								
Cyclops vernalis							10	
Eucyclops agilis								
Paracyclops fimbriatus poppei								
Ostracoda (unidentified)	10	20	10					

2.4.4 Periphyton

2.4.4.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.4.1 of Progress Report 3 for specific objectives

2.4.4.2 Methods

No change in methods has occurred since Progress Report 3. See section 2.4.4.2 of Progress Report 2 and 3 for specific methods.

2.4.4.3 Results

A list of algal taxa observed in October 1975 is presented in Appendix E-10-1. The quantitative data from those collections is included in Appendix E-10-2.

Periphytic algal densities and the number of species were generally low at the headwater stations (particularly at Station 3) during the October 1975 sampling. The most abundant species included the chrysophytes Bicoeca lacustris, Achnanthes minutissima, Gomphonema intricatum, Epithemia sorex, and Navicula pelliculosa and the blue-greens Lyngbya spp. At the tract stations, the periphyton algal densities were higher than those of the headwaters. The most abundant taxa were Achnanthes minutissima, Achnanthes lanceolata, Bicoeca lacustris, Navicula cryptocephala, and Gomphonema intricatum. In Yellow Creek, the diatom Achnanthes minutissima was the dominant periphytic algal species at Stations 20 - 22, whereas Nitzschia frustulum, Nitzschia palea, and Achnanthes minutissima were the dominant species at Station 19. In the White River, the most abundant taxa included Epithemia sorex and several other diatom species and the blue greens Lyngbya spp.

During the November - December 1975 sampling period, the most abundant periphytic algal taxa included the chrysophytes Achnanthes minutissima, Achnanthes lanceolata, Bicoeca lacustris, Navicula cryptocephala, Gomphonema intricatum, and the blue-greens Lyngbya spp. At the tract stations, the dominant taxa were Achnanthes minutissima, Gomphonema intricatum, Navicula cryptocephala, and Synedra amphicephala. In Yellow Creek, the most abundant periphytic taxa included Achnanthes minutissima, Synedra amphicephala, Nitzschia frustulum, Nitzschia holsatica, and the blue-greens Lyngbya spp. and Calothrix spp. The diatoms Epithemia sorex, Nitzschia dissipata, Diatoma vulgare, and Gomphonema ventricosum were the dominant algal taxa in the White River periphyton during the November - December sampling.

2.4.4 - Periphyton Data

RBOSP PROGRESS REPORT

APPENDIX E-10-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-10-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

CYANOPHYTA

Calothrix spp.
Lyngbya spp.
Oscillatoria spp.

CHLOROPHYTA

Cladophora spp.
Closterium leibleinii
Zygnema spp.

CHRYSOPHYTA

Achnanthes hauckiana
Achnanthes lanceolata
Achnanthes minutissima
Amphora sp. 1
Amphora montana
Amphora ovalis
Amphora ovalis var. *pediculus*
Amphipleura pellucida
Amphiprora alata
Anomoéoneis sphaerophora
Bicoeca lacustris
Caloneis amphisbaena
Caloneis bacillum
Caloneis ventricosa
Chrysidiastrum ocellatum
Cocconeis pediculus
Cocconeis placentula
Cyclotella meneghiniana
Cylindrotheca gracilis
Cymatopleura solea
Cymbella affinis
Cymbella lanceolata
Cymbella microcephala
Cymbella mexicana
Cymbella prostrata
Cymbella pusilla
Cymbella sinuata
Cymbella ventricosa
Diatoma hiemale

Diatoma tenue
Diatoma tenue var. elongatum
Diatoma vulgare
Epithemia sorex
Epithemia zebra
Fragilaria construens
Fragilaria leptostauron
Fragilaria pinnata
Fragilaria vaucheriae
Gomphonema sp. 1
Gomphonema intricatum
Gomphonema olivaceum
Gomphonema parvulum
Gyrosigma acuminatum
Hantzschia amphioxys
Mastogloia smithii
Melosira ambiqua
Melosira varians
Meridion circulare
Navicula arvensis
Navicula capitata
Navicula cryptocephala
Navicula gregaria
Navicula minima
Navicula mutica
Navicula oblonga
Navicula pelliculosa
Navicula radiosa
Navicula salinarum var. intermedia
Navicula subhamulata
Navicula tripunctata
Navicula vaucheriae
Navicula virdula
Navicula sp. 1
Navicula sp. 2
Nitzschia acicularis
Nitzschia amphibia
Nitzschia apiculata
Nitzschia capitellata
Nitzschia chasei
Nitzschia denticula
Nitzschia dissipata
Nitzschia frustulum
Nitzschia gracilis
Nitzschia holsatica
Nitzschia hungarica
Nitzschia latens

Nitzschia linearis
Nitzschia microcephala
Nitzschia palea
Nitzschia sigmoidea
Nitzschia thermalis
Pinnularia brebissonii
Pinnularia viridis
Pleurosigma delicatulum
Rhoicosphenia curvata
Rhopalodia gibba
Rhopalodia gibberula
Stauroneis phoenicentron
Surirella ovata
Surirella ovalis
Synedra amphicephala
Synedra delicatissima
Synedra minuscula
Synedra tenera
Synedra ulna
Thalassiosira fluviatilis

RBOSP PROGRESS REPORT

APPENDIX E-10-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-10-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

Site = 01

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
BICOECA LACUSTRIS	1832.00	655.00	149.00
ACHNANTHES LANCEOLATA	9.00	27.00	20.00
ACHNANTHES MINUTISSIMA	1310.00	4577.00	1411.00
GYROSIGMA ACUMINATUM	.04	.30	.40
NAVICULA ARVENSIS	14.00	7.00	7.00
NAVICULA CRYPTOCEPHALA	36.00	20.00	7.00
NAVICULA MINIMA		7.00	
NAVICULA VIRIDULA	5.00		
PINNULARIA VIRIDIS			.06
AMPHORA OVALIS VAR. PEDICULUS	5.00		
GOMPHONEMA INTRICATUM	162.00	648.00	155.00
EPITHEMIA SOREX	32.00	155.00	
RHOPALODIA GIBBA		.10	
NITZSCHIA ACICULARIS	5.00		
NITZSCHIA DISSIPATA		7.00	
NITZSCHIA FRUSTULUM	5.00		7.00
NITZSCHIA LINEARIS			.20
NITZSCHIA PALEA		34.00	20.00
SURIRELLA OVALIS		.20	.60

RBOSP PROGRESS REPORT

APPENDIX E-10-2 (Continued)

Site = 02

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
BICOECA LACUSTRIS	402.00	795.00	584.00
FRAGILARIA VAUCHERIAE			3.00
SYNEDRA AMPHICEPHALA			44.00
SYNEDRA ULNA		8.00	
ACHNANTHES LANCEOLATA	7.00	15.00	30.00
ACHNANTHES MINUTISSIMA	138.00	293.00	756.00
NAVICULA ARVENSIS			7.00
NAVICULA CAPITATA			7.00
NAVICULA CRYPTOCEPHALA	2.00	53.00	10.00
NAVICULA MINIMA	3.00		7.00
NAVICULA SP 1		8.00	3.00
NAVICULA SP 2			10.00
PINNULARIA BREBISSONII		8.00	
COMPHONEMA INTRICATUM	3.00		3.00
EPITHEMIA SOREX		158.00	3.00
RHOPALODIA GIBBA		.20	
RHOPALODIA GIBBERULA			3.00
NITZSCHIA DISSIPATA	3.00	30.00	
NITZSCHIA FRUSTULUM		23.00	14.00
NITZSCHIA LINEARIS			.10

APPENDIX E-10-2 (Continued)

Site = 02

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA PALEA	10.00	8.00	14.00
SURIRELLA OVALIS	.20	8.00	.30

APPENDIX E-10-2 (Continued)

Site = 03

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
PICTETA LACUSTRIS		439.00	
ACHNANTHES LANCEOLATA	4.00	2.00	10.00
ACHNANTHES MINUTISSIMA	14.00	67.00	155.00
AMPHIPLEURA SPHAEROPHORA	4.00	2.00	3.00
NAVICULA ARVENSIS		5.00	27.00
NAVICULA CRYPTOCEPHALA	9.00	4.00	47.00
NAVICULA PELLICULOSA	8.00	2.00	108.00
NAVICULA SP 1	50.00	26.00	41.00
NAVICULA SP 2	32.00	29.00	101.00
CALONEIS BACILLUM	2.00	4.00	
CALONEIS VENTRICOSA		5.00	
PINNULARIA BREBISSONII			3.00
CYMBELLA VENTRICOSA	4.00		
GOMPHONEMA INTRICATUM	4.00		51.00
RHOPALODIA GIBBERULA		2.00	
NAVICULA AMPHIOXYS			3.00
NITZSCHIA APICULATA			7.00
NITZSCHIA CAPITELLATA	4.00		3.00
NITZSCHIA FRUSTULUM	7.00		7.00
NITZSCHIA LATENS		4.00	

2.4.4.740

APPENDIX E-10-2 (Continued)

Site = 03

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS		4.00	.10
NITZSCHIA PALEA	7.00		10.00
SURIRELLA OVALIS	2.00		

2.4.4.741

APPENDIX E-10-2 (Continued)

Site = 04

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	91.00	202.00	122.00
CHRYSOPHYTA			
FRAGILARIA LACUSTRIS	348.00	259.00	447.00
ACHNANTHES LANCEOLATA	9.00	9.00	4.00
ACHNANTHES MINUTISSIMA	99.00	68.00	10.00
GYROSIGMA ACUMINATUM	.06	.03	
NAVICULA ARVENSIS	4.00		
NAVICULA CRYPTOCEPHALA	26.00	12.00	5.00
NAVICULA PELLICULOSA	2.00		
NAVICULA SP 1	9.00	7.00	4.00
AMPHORA OVALIS		2.00	
GOMPHONEMA INTRICATUM	2.00		
HANTZSCHIA AMPHIOXYS			.03
NITZSCHIA DENTICULA	4.00	2.00	
NITZSCHIA LATENS	2.00		
NITZSCHIA LINEARIS	4.00	.60	.70
NITZSCHIA PALEA	2.00	2.00	
SURIRELLA OVATA			2.00

APPENDIX E-10-2 (Continued)

Site = 04

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVALIS	.03	.03	

APPENDIX E-10-2 (Continued)

Site = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
CLADOPHORA SPP	63.00	41.00	
CHRYSOPHYTA			
DIATOMA TENUE	18.00		
DIATOMA TENUE VAR. ELONGATUM			34.00
FRAGILARIA VAUCHERIAE	32.00	27.00	101.00
SYNEDRA ACUS	68.00	216.00	506.00
SYNEDRA ULNA	14.00	68.00	68.00
COCCONEIS PLACENTULA	27.00	176.00	338.00
ACHNANTHES LANCEOLATA	0.00	176.00	135.00
ACHNANTHES MINUTISSIMA	12078.00	18428.00	23659.00
AMPHIPLEURA PELLUCIDA			34.00
NAVICULA CRYPTOCEPHALA	18.00		
NITZSCHIA PALEA			.30
SURIRELLA OVALIS	14.00	1.50	4.00
SURIRELLA SPIRALIS			.30

2.4.4.744

APPENDIX E-10-2 (Continued)

Site = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
NAVICULA ARVENSIS		95.00	371.00
NAVICULA CRYPTOCEPHALA	45.00	68.00	304.00
NAVICULA GREGARIA	5.00		
NAVICULA LANCEOLATA	23.00		
NAVICULA RIGIDA		81.00	135.00
NAVICULA SELIGA	.28	.40	.60
NAVICULA PELLICULOSA			68.00
NAVICULA RADIOSA		41.00	34.00
NAVICULA VIRIDULA	5.00		34.00
NAVICULA SP 1	27.00	95.00	68.00
CALOPEIS LACILLUM	18.00		
CALOPEIS VENTRICOSA	5.00		
PINNULARIA VIRIDIS		.10	
AMPHORA OVALIS	5.00	41.00	
AMPHORA SP 1	5.00		
CYMBELLA AFFINIS	27.00	108.00	•
CYMBELLA CYMBICEPHALA	5.00	41.00	68.00
CYMBELLA VENTRICOSA	108.00	27.00	135.00
GOMPHONEMA INTRICATUM		230.00	68.00
GOMPHONEMA OLIVACEUM	32.00	14.00	

APPENDIX E-10-2 (Continued)

Site = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
GOMPHONEMA PARVULUM	5.00	54.00	
GOMPHONEMA VENTRICOSUM		14.00	
GOMPHONEMA SP 1	14.00	54.00	169.00
EPITHEMIA ZEBRA	18.00	.40	.30
RHOPALODIA GIBBA	9.00	.10	.60
RHOPALODIA GIBBERULA	36.00		
NITZSCHIA ACICULARIS	9.00		
NITZSCHIA FRUSTULUM	144.00	4008.00	1586.00
NITZSCHIA PALEA	41.00	135.00	304.00
NITZSCHIA SIGMOIDEA		.10	
SURIRELLA OVATA	5.00		34.00
SURIRELLA OVALIS	.08	.10	

2.4.4.746

APPENDIX E-10-2 (Continued)

Site = 07

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	405.00	1215.00	3814.00
CHRYSOPHYTA			
CICOCCA LACUSTRIS	2396.00		
SYNEDRA ULNA			34.00
ACHNANTHES LANCEOLATA	34.00	10.00	34.00
ACHNANTHES MINUTISSIMA	12893.00	2546.00	29801.00
CYMBELLA ACUMINATUM		10.00	.60
NAVICULA CRYPTOCEPHALA	68.00	19.00	371.00
NAVICULA MINIMA	169.00		
NAVICULA PELLICULOSA		19.00	
NAVICULA SP 1	371.00	29.00	68.00
NAVICULA SP 2	135.00		34.00
CALONEIS BACILLUM			34.00
ANOMOEA SP 1	68.00		
CYMBELLA AFFINIS			34.00
GOMPHONEMA INTRICATUM		29.00	
GOMPHONEMA PARVULUM		10.00	
GOMPHONEMA SP 1			34.00

APPENDIX E-10-2 (Continued)

Site = 07

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
EPITHEMIA SUREX		10.00	34.00
RHOPALODIA GIBBERULA		10.00	
NITZSCHIA AMPHIBIA			34.00
NITZSCHIA DENTICULA	1249.00	10.00	574.00
NITZSCHIA FONSTULUM	101.00	67.00	709.00
NITZSCHIA LINEARIS	34.00	19.00	169.00
NITZSCHIA PALEA	203.00	19.00	101.00
SURIRELLA OVALIS	34.00	.24	2.00

APPENDIX E-10-2 (Continued)

Site = 08

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
OSCILLATORIA SPP			10.00
CHRYSOPHYTA			
FRAGILARIA LACUSTRIS	990.00	11234.00	2555.00
CHRYSOPHYCEAE-SYNURACEAE UNDET.			19.00
MERIDION CIRCULARE	7.00	10.00	
SYNEDRA AMPHICEPHALA			10.00
ACHNANTHES LANCEOLATA	68.00	154.00	223.00
ACHNANTHES MINUTISSIMA	156.00	309.00	338.00
CYMBELLA AUSTRALICA	.04		.10
NAVICULA ARVENSIS	19.00	58.00	19.00
NAVICULA CRYPTOCEPHALA	43.00	10.00	96.00
NAVICULA FELICENSA	20.00		10.00
NAVICULA VIRIDULA	2.00		
NAVICULA SP 1		10.00	10.00
NAVICULA SP 2	2.00		
PINNULARIA LEPTOSOMA		10.00	
AMPHORA OVALIS			10.00
AMPHORA SP 1	2.00		10.00

APPENDIX E-10-2 (Continued)

Site = 08

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS			10.00
GOMPHONEMA INTRICATUM	14.00	29.00	77.00
EPITHEMIA SUREX	2.00		
NITZSCHIA LENTICULA			10.00
NITZSCHIA FRUSTULUM		29.00	19.00
NITZSCHIA LINEARIS			.10
NITZSCHIA PALEA	16.00		
SURIRELLA OVATA			19.00
SURIRELLA OVALIS		.08	.10

2.4.4.750

APPENDIX E-10-2 (Continued)

Site = 09

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	14.00	135.00	
OSCILLATORIA SPP	7.00		
CHLOROPHYTA			
CLOSTERIUM LEIBLEINII	.06	.10	
CHRYSOPHYTA			
ACHNANTHES LANCEOLATA	7.00		14.00
ACHNANTHES MINUTISSIMA	[illegible].00	5130.00	4577.00
CYMBELLA ACUMINATUM		.20	.20
NAVICULA ARVENSIS		7.00	
NAVICULA CRYPTOCEPHALA	27.00	54.00	189.00
NAVICULA MINIMA			14.00
NAVICULA PELLICULOSA			14.00
NAVICULA SP 1		74.00	135.00
NAVICULA SP 2	20.00	7.00	54.00
SURIRELLA BACILLUM		7.00	14.00
SURIRELLA VENTRICOSA			27.00

2.4.4.751

APPENDIX E-10-2 (Continued)

Site = 09

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
PINNULARIA VIRIDIS		.10	.10
AMPHORA OVALIS	7.00	7.00	
AMPHORA SP 1			54.00
CYMBELLA AFFINIS		14.00	14.00
GOMPHONEMA INTRICATUM	7.00		
EPITHEMIA SUBLX		14.00	
EPITHEMIA ZEBRA	.06		
RHOPALODIA GIBBERULA		7.00	
NITZSCHIA ACICULARIS		7.00	
NITZSCHIA APICULATA		7.00	
NITZSCHIA DENTICULA	34.00	250.00	203.00
NITZSCHIA FRUSTULUM	41.00	54.00	95.00
NITZSCHIA LINEARIS	7.00	14.00	54.00
NITZSCHIA PALEA	7.00	14.00	41.00
SURIRELLA OVATA		14.00	
SURIRELLA OVALIS	.20	7.00	14.40

2.4.4.752

APPENDIX E-10-2 (Continued)

Site = 12

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SYNEDRA AMPHICEPHALA		34.00	
ACHNANTHES LANCEOLATA	17.00	169.00	11.00
ACHNANTHES MINUTISSIMA	113.00	844.00	152.00
GYROSIGMA ACUMINATUM	.15		
NAVICULA CRYPTOCEPHALA	34.00	372.00	39.00
NAVICULA CUSPIDA			6.00
NAVICULA PELLICULOSA	11.00		
NAVICULA RETUSIFORMIS		34.00	
NAVICULA SP 1	17.00	203.00	22.00
NAVICULA SP 2	6.00	68.00	22.00
NITZSCHIA OVALIS		34.00	
CYMBELLA AFFINIS			6.00
CYMBELLA MICROCEPHALA		34.00	6.00
RHOPALODIA GIBERULA	6.00	34.00	6.00
CYCLOTELLA GRACILIS		34.00	
HANTZSCHIA AMPHIOXYS	6.00		6.00
NITZSCHIA ARTICULATA		34.00	
NITZSCHIA CAPITELLATA		68.00	
NITZSCHIA DENTICULA	6.00	405.00	17.00
NITZSCHIA FRUSTULUM	23.00	304.00	56.00

APPENDIX E-10-2 (Continued)

Site = 12

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS	11.00	68.00	17.00
NITZSCHIA PALEA	45.00	169.00	22.00
SURIRELLA OVATA			6.00
SURIRELLA OVALIS	.30	34.00	11.00

APPENDIX E-10-2 (Continued)

Site = 13

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP			371.00
CHRYSOPHYTA			
MICROCA LACUSTRIS		9225.00	641.00
PERIDIUM CIRCULARE	186.00	428.00	101.00
FRAGILARIA VAUCHERIAE	17.00	135.00	371.00
SYNEDRA AMPHICEPHALA			68.00
ACHNANTHES LANCEOLATA	827.00	1575.00	2666.00
ACHNANTHES MINUTISSIMA	1772.00	12825.00	19339.00
GYROSIGMA ACUMINATUM	.30	.20	.30
NAVICULA ARVENSIS		1328.00	979.00
NAVICULA CRYPTOCEPHALA	1502.00	2250.00	5096.00
NAVICULA MINIMA			34.00
NAVICULA PELLICULOSA	17.00		1148.00
NAVICULA VIRIDULA	84.00		101.00
NAVICULA SP 1	34.00	23.00	371.00
NAVICULA SP 2		23.00	
PINNULARIA VIRIDIS	.15		
AMPHORA OVALIS			34.00

APPENDIX E-10-2 (Continued)

Site = 13

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS	219.00	450.00	202.00
GOMPHONEMA INTRICATUM	473.00	2768.00	1654.00
GOMPHONEMA PARVULUM		23.00	
CYLINDROTHECA GRACILIS	152.00	90.00	
NITZSCHIA ACICULARIS	186.00	1013.00	5130.00
NITZSCHIA CAPITELLATA	17.00		236.00
NITZSCHIA DENTICULA	152.00		
NITZSCHIA FRUSTULUM		68.00	135.00
NITZSCHIA HUNGARICA			34.00
NITZSCHIA LINEARIS	17.00	23.00	34.00
NITZSCHIA PALEA	17.00	383.00	1418.00
NITZSCHIA THERMALIS		23.00	
SURIRELLA OVATA		68.00	203.00
SURIRELLA OVALIS			.30

APPENDIX E-10-2 (Continued)

Site = 14

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
MELOSIRA AMBIGUA	.20		
CYCLOTELLA MENEGHINIANA	14.00	14.00	3.00
FRAGILARIA VAUCHERIAE		3.00	
SYNEDRA PUPUSCULA	7.00		10.00
ACHNANTHES LANCEOLATA	3.00	3.00	3.00
ACHNANTHES MINUTISSIMA	327.00	378.00	769.00
NAVICULA CRYPTOCEPHALA	17.00	3.00	41.00
NAVICULA CRUCIFERA	10.00	3.00	
NAVICULA OPTICA	3.00		
NAVICULA VIRIDULA			3.00
NAVICULA SP 2			10.00
CYMBELLA AFFINIS	14.00	24.00	125.00
CYMBELLA CISTULA	3.00		64.00
CYMBELLA MICROCEPHALA			3.00
CYMBELLA VENTRICOSA		3.00	
NITZSCHIA ACICULARIS	31.00	61.00	202.00
NITZSCHIA DENTICULA	3.00	3.00	7.00
NITZSCHIA FRUSTULUM		.20	
NITZSCHIA LINEARIS		3.00	
NITZSCHIA PALEA			

APPENDIX E-10-2 (Continued)

Site = 19

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SP	102.00		
CALOTHRIX SP	270.00		
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS		25.00	17.00
SYNEDRA AMPHICEPHALA	17.00		
SYNEDRA DELICATISSIMA		17.00	
SYNEDRA MINUSCULA			8.00
COCCONEIS PLACENTULA	34.00	8.00	8.00
ACHNANTHES HAUCKIANA	110.00		8.00
ACHNANTHES LANCEOLATA	52.00	8.00	25.00
ACHNANTHES MINUTISSIMA	152.00	93.00	118.00
RHOICOSPHENIA CURVATA	34.00	17.00	85.00
GYROSIGMA ACUMINATUM	34.00	.20	
PLEUROSIGMA DELICATULUM	4.00	8.00	8.00
NAVICULA CRYPTOCEPHALA	34.00	17.00	
NAVICULA MINIMA	743.00	42.00	51.00
NAVICULA SUBTILIS	17.00	8.00	
NAVICULA TRIVIALIS		8.00	17.00

APPENDIX E-10-2 (Continued)

Site = 19

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA PELLICULOSA	17.00		
NAVICULA VISTULA	203.00		
NAVICULA SP 1	861.00	25.00	17.00
NAVICULA SP 2	17.00		
CALONEIS VENTRICOSA	17.00		
CYMBELLA MICROCEPHALA		8.00	
CYMBELLA PUSILLA	17.00		
CYMBELLA SP	34.00		
CYMBOPLEURA OBLONGA	34.00		
AMPHIPRORA ALATA		8.00	
EPITHEMIA SOREX	.30		
EPITHEMIA ZEBRA	102.00	1.00	8.00
RHOPALODIA GIBBA	236.00	34.00	59.00
RHOPALODIA GIBERULA	17.00		8.00
NITZSCHIA AMPHIBIA		8.00	8.00
NITZSCHIA ACICULARIS		8.00	
NITZSCHIA ARTICULATA		8.00	
NITZSCHIA DENTICULA	1333.00	709.00	633.00
NITZSCHIA FRUSTULUM			8.00
NITZSCHIA HUNGARICA	34.00		8.00
NITZSCHIA LINEARIS			

APPENDIX E-10-2 (Continued)

Site = 19

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA PALEA	286.00	102.00	68.00
SURIRELLA OVATA	17.00	8.00	8.00

2.4.4.760

APPENDIX E-10-2 (Continued)

Site = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
ZYGNEMA SP			2.70
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS		11.00	
CYCLOTELLA MENEGHINIANA	23.00	23.00	135.00
SYNEDRA AMPHICEPHALA	45.00		
SYNEDRA MINUSCULA	23.00	23.00	68.00
SYNEDRA PULCHELLA		68.00	135.00
SYNEDRA ULNA		11.00	
ACHNANTHES LANCEOLATA	23.00		
ACHNANTHES MINUTISSIMA	2851.00	7014.00	18023.00
GYROSIGMA ACUMINATUM	22.00		1.50
NAVICULA CRYPTOCEPHALA	383.00	11.00	
NAVICULA PELLICULOSA			68.00
NAVICULA VIRIDULA	23.00		
NAVICULA SP 1	23.00		68.00
CALONEIS BACILLUM	23.00		
CYMBELLA EHRENBERGII	473.00	113.00	405.00
CYMBOPLEURA INDICATUM	113.00		

APPENDIX E-10-2 (Continued)

Site = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
FITZSCHIA ARTICULATA	23.00		
FITZSCHIA EXUSTULUM	765.00	34.00	270.00
FITZSCHIA LATENS	68.00		
FITZSCHIA MICROCEPHALA		11.00	
FITZSCHIA PALEA	158.00	45.00	405.00
SURIRELLA OVALIS	23.60		

2.4.4.762

APPENDIX E-10-2 (Continued)

Site = 21

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SP		189.00	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA	14.00	14.00	
FRAGILARIA VAUCHERIAE	14.00		
ACHNANTHES MINUTISSIMA	3132.00	11556.00	4703.00
GYROSIGMA ACUMINATUM		.40	.30
NAVICULA CRYPTOCEPHALA	27.00	14.00	45.00
NAVICULA VIRIDULA			23.00
NAVICULA SP 1		14.00	
CYMBELLA PUSILLA	27.00	149.00	68.00
GOMPHONEMA INTRICATUM	14.00	41.00	158.00
EPITHEMIA SOREX	27.00		
RHOPALODIA GIBBA			.30
NITZSCHIA BACILLUM	27.00	95.00	23.00
NITZSCHIA LINEARIS		14.00	
NITZSCHIA PALEA	27.00	41.00	68.00
SURIRELLA OVATA	14.00		

2.4.4.763

APPENDIX E-10-2 (Continued)

Site = 22

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	23.00		
CHLOROPHYTA			
CLADOPHORA SPP	45.00		
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS		23.00	
CYCLOTELLA MENEGHINIANA	23.00	45.00	
SYNEDRA MINUSCULA	68.00		45.00
ACHNANTHES MINUTISSIMA	12735.00	35460.00	13973.00
CYMBOSIRA ACUMINATUM			.20
NAVICULA ARVENSIS		23.00	
NAVICULA CRYPTOCEPHALA	225.00	45.00	23.00
NAVICULA SALINARUM		45.00	23.00
NAVICULA TRIPUNCTATA	23.00		
NAVICULA VIRIDULA			23.00
NAVICULA SP 1	45.00	90.00	68.00
NAVICULA SP 2	23.00		

APPENDIX E-10-2 (Continued)

Site = 22

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS BACILLUM	23.00		
CYMBELLA FUSILLA	45.00	158.00	45.00
GOMPHONEMA INTRICATUM	158.00	23.00	
AMPHIPRORA ALATA		23.00	
EPITHEMIA SOREX	90.00	90.00	68.00
RHOPALODIA GIBBA	23.00	.40	
NITZSCHIA APICULATA		23.00	
NITZSCHIA DISSIPATA		23.00	
NITZSCHIA FRUSTULUM	698.00	270.00	360.00
NITZSCHIA PICEOCEPHALA	23.00		
NITZSCHIA PALEA	23.00	68.00	45.00
SURIRELLA OVALIS			.40

2.4.4.765

APPENDIX E-10-2 (Continued)

Site = 23

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	1215.00	68.00	4793.00
OSCILLATORIA SPP		68.00	
CALOTHRIX SPP	68.00	135.00	
CHRYSOPHYTA			
DIATOMA VULGARE	135.00		270.00
FRAGILARIA PINNATA			68.00
FRAGILARIA VAUCHERIAE			68.00
SYNEDRA ULNA	68.00		
CYCLOTELLA PEDICULUS		68.00	
CYCLOTELLA PLACENTULA			68.00
ACHNANTHES MINUTISSIMA	540.00	135.00	810.00
GYROSIGMA ACUMINATUM		1.20	
NAVICULA CRYPTOCEPHALA	1553.00	1418.00	1215.00
NAVICULA MINIMA			68.00
NAVICULA SALINARUM VAR. INTERMEDIA	338.00	606.00	743.00
NAVICULA TRIPUNCTATA		270.00	68.00
NAVICULA VIRIDULA	135.00		68.00
NAVICULA SP 1			135.00

APPENDIX E-10-2 (Continued)

Site = 23

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
ACHNANTHES EXILIS VAR. PEDICULUS	270.00	68.00	473.00
CYMBELLA AFFINIS	270.00		68.00
CYMBELLA MEXICANA	1.20		.60
CYMBELLA SINUATA			68.00
CYMBELLA VENTRICOSA	68.00	68.00	
GOMPHONEMA ELEVATUM	68.00		135.00
GOMPHONEMA VENTRICOSUM			68.00
MELOSIRA SOREX	31658.00	29633.00	20723.00
RHOPALODIA GIBBA	135.00	68.00	135.00
RHOPALODIA GIBERULA			68.00
NITZSCHIA CLOSEI	135.00	68.00	405.00
NITZSCHIA DISSIPATA	1485.00	1013.00	3915.00
NITZSCHIA FRUSTULUM	473.00	878.00	1553.00
NITZSCHIA PALEACEA			405.00
NITZSCHIA PALEA		68.00	
NITZSCHIA PALEA		68.00	135.00
CYMATOPLEURA SOLEA			.60

2.4.4.767

APPENDIX E-10-2 (Continued)

Site = 24

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SP.	675.00	473.00	945.00
CHRYSOPHYTA			
DIATOMA VULGARE			135.00
FRAGILARIA PINNATA		405.00	
COCCONEIS PEDICULUS	68.00		
COCCONEIS PLACENTULA	68.00	68.00	
ACHNANTHES MINUTISSIMA	338.00	135.00	338.00
GYROSIGMA ACUMINATUM	68.00	68.00	1.20
PLEUROSIGMA DELICATULUM		.60	.60
NAVICULA CRYPTOCEPHALA	1350.00	4523.00	6210.00
NAVICULA MINIMA		203.00	
NAVICULA OBLONGA		68.00	
NAVICULA SALINARUM VAR. INTERMEDIA	1620.00	1823.00	1148.00
NAVICULA SUBRHOMBOIDEA		1553.00	
NAVICULA TRIPUNCTATA	405.00	1080.00	810.00
NAVICULA VAUCHERIAE	68.00		
NAVICULA VIRIDULA	68.00	68.00	473.00
CALONEIS AMPHISBAENA		1.00	

APPENDIX E-10-2 (Continued)

Site = 24

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS BACILLUM	135.00	135.00	
AMPHORA OVALIS VAR. PEDICULUS	1418.00	2430.00	5535.00
CYMBELLA AFFINIS	203.00	68.00	135.00
CYMBELLA MEXICANA		3.00	1.20
CYMBELLA SINUATA	270.00	68.00	203.00
GOMPHONEMA INTRICATUM	405.00		
GOMPHONEMA OLIVACEUM	135.00	68.00	135.00
GOMPHONEMA VENTRICOSUM	68.00	203.00	270.00
GOMPHONEMA SP 1			68.00
EPITHEMIA S.REX	6143.00	7695.00	11678.00
RHOPALODIA GIBBA	2093.00	135.00	135.00
NITZSCHIA AMPHIBIA			68.00
NITZSCHIA CHASEI	945.00	1688.00	1418.00
NITZSCHIA DISSIPATA	1958.00	4523.00	6143.00
NITZSCHIA FRUSTULUM	608.00	1755.00	1215.00
NITZSCHIA GRACILIS	68.00		
NITZSCHIA HOLSATICA		68.00	68.00
NITZSCHIA PALEA	68.00	540.00	270.00
CYMATOPLEURA SOLEA			68.00
SURIRELLA OVATA		68.00	

2.4.4.769

APPENDIX E-10-2 (Continued)

Site = 25

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SP.	135.00	1013.00	1046.00
CALOTHRIX SP.		68.00	405.00
CHRYSOPHYTA			
DIATOMA VULGARE	203.00	945.00	101.00
FRAGILARIA PINNATA		68.00	
FRAGILARIA VAUCHERIAE	34.00		
COCCONEIS PEDICULUS		68.00	
COCCONEIS PLACENTULA	34.00		68.00
ACHNANTHES MINUTISSIMA	506.00	270.00	101.00
GYROSIGMA ACUMINATUM		68.00	
NAVICULA CRYPTOCEPHALA	1620.00	5130.00	1552.00
NAVICULA SALINARUM VAR. INTERMEDIA	439.00	1148.00	438.00
NAVICULA SUBHAMULATA		68.00	
NAVICULA TRIPUNCTATA	304.00	1215.00	337.00
NAVICULA VIRIDULA	68.00	135.00	101.00
CAMPYLODISCUS AMPHISBAENA	.30	1.20	
CAMPYLODISCUS CLYPEUS	34.00		
AMPHORA OVALIS VAR. PEDICULUS	2160.00	3105.00	304.00

APPENDIX E-10-2 (Continued)

Site = 25

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS	169.00	338.00	135.00
CYMBELLA CESATIANA		.60	
CYMBELLA VENTRICOSA	169.00	68.00	
GOMPHONEMA OLIVACEUM	405.00	338.00	337.00
GOMPHONEMA VENTRICOSUM	169.00	135.00	
EPITHEMIA SOREX	6143.00	17145.00	6581.00
RHOPALODIA GIBBA	.30	405.00	68.00
RHOPALODIA GIBERULA		68.00	
NITZSCHIA CHASEI	405.00	1418.00	472.00
NITZSCHIA DISSIPATA	1721.00	6885.00	2160.00
NITZSCHIA FRUSTULUM	574.00	878.00	337.00
NITZSCHIA GRACILIS	34.00		34.00
NITZSCHIA PELSATICA	34.00		
NITZSCHIA PALEA	68.00	68.00	68.00

APPENDIX E-10-2 (Continued)

Site = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	338.00	1485.00	337.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			68.00
DIATOMA VULGARE	101.00	338.00	202.00
FRAGILARIA CONSTRUENS		68.00	
FRAGILARIA LEPTOSTAURON		68.00	
FRAGILARIA PINNATA	68.00		
FRAGILARIA VAUCHERIAE			34.00
SYNEDRA DELICATISSIMA			68.00
COCCONEIS PEDICULUS	68.00		
COCCONEIS PLACENTULA	68.00	135.00	135.00
ACHNANTHES LANCEOLATA			34.00
ACHNANTHES MINUTISSIMA	101.00	202.00	101.00
GYROSIGMA ACUMINATUM	34.00	2.40	34.00
NAVICULA CRYPTOCEPHALA	1856.00	4054.00	3274.00
NAVICULA MINIMA	68.00		
NAVICULA SECURA VAR. INTERMEDIA	979.00	1622.00	1046.00
NAVICULA TRIPUNCTATA	506.00	945.00	742.00

APPENDIX E-10-2 (Continued)

Site = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA VISIDULA	101.00	68.00	
NAVICULA SP 2	34.00		
CALONEIS LANCILLUS		68.00	
AMPHORA OVALIS VAR. PEDICULUS	2093.00	1485.00	2768.00
CYMBELLA AFFINIS	101.00	338.00	236.00
CYMBELLA MEXICANA	.60		
CYMBELLA SINUATA	68.00		68.00
CYMBELLA VENTRICOSA	34.00	68.00	
GOMPHONEMA OLIVACEUM	101.00	270.00	169.00
GOMPHONEMA VENTRICOSUM	68.00	68.00	135.00
EPITHEMIA SOREX	6514.00	10203.00	8809.00
ROPALODIA GIBBA	34.00	270.00	68.00
NITZSCHIA APICULATA	34.00		
NITZSCHIA CHASEI	574.00	472.00	472.00
NITZSCHIA DISSIPATA	2801.00	1822.00	2295.00
NITZSCHIA PAPILLULOP	405.00	1215.00	371.00
NITZSCHIA GRACILIS	101.00		
NITZSCHIA HOLSATICA	34.00	202.00	
NITZSCHIA PALEA	34.00	68.00	34.00
NITZSCHIA SIGMOIDEA	34.00		.30

APPENDIX E-10-2 (Continued)

Site = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMATOPLEURA SOLEA	.30		.30
SURIRELLA OVATA			34.00
SURIRELLA OVALIS		68.00	

APPENDIX E-10-2 (Continued)

Site = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	1418.00	1924.00	608.00
CALOTHRIX SPP	101.00	236.00	34.00
CHLOROPHYTA			
CLADOPHORA SPP		101.00	
CHRYSOPHYTA			
DIATOMA VULGARE		34.00	202.00
FRAGILARIA VAUCHERIAE	34.00	34.00	101.00
SYNEDRA ULNA		34.00	
COCCONEIS PEDICULUS	34.00		34.00
COCCONEIS PLACENTULA		68.00	
ACHNANTHES MINUTISSIMA	169.00	236.00	101.00
GYROSIGMA ACUMINATUM	.30	1.00	
PLEUROSIGMA DELICATULUM		.30	
NAVICULA CRYPTOCEPHALA	1924.00	2531.00	1451.00
NAVICULA MINIMA			34.00
NAVICULA SALINARUM VAR. INTERMEDIA	810.00	978.00	540.00

2.4.4.775

APPENDIX E-10-2 (Continued)

Site = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA TRIPUNCTATA	776.00	1012.00	573.00
NAVICULA VITIOSA	135.00	34.00	
CALONEIS AMPHISBAENA		.30	
CALONEIS LANCEOLATA		101.00	
AMPHORA OVALIS VAR. PEDICULUS	708.00		776.00
CYMBELLA AFFINIS	34.00	68.00	68.00
CYMBELLA PROSTRATA		34.00	34.00
CYMBELLA SINUATA			68.00
CYMBELLA VENTRICOSA	68.00	34.00	
GOMPHONEMA INTRICATUM			101.00
GOMPHONEMA OLIVACEUM	135.00	169.00	34.00
GOMPHONEMA VENTRICOSUM	101.00	34.00	101.00
GOMPHONEMA SP 1		34.00	
EPITHEMIA SOREX	7020.00	9619.00	6142.00
RHOPALODIA GIBBA	34.00	101.00	68.00
RHOPALODIA GIBBERULA		34.00	
NITZSCHIA CLOSEI	573.00	540.00	101.00
NITZSCHIA DISSIPATA	1789.00	2700.00	1586.00
NITZSCHIA FRUSTULUM	337.00	675.00	337.00
NITZSCHIA PALEA	68.00	34.00	

2.4.4.776

APPENDIX E-10-2 (Continued)

Site = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA SIGMOIDEA		.30	.60
CYMATOPLEURA SOLEA	.30	.60	1.00
SURIRELLA OVATA		2396.00	34.00

2.4.4.777

APPENDIX E-10-2 (Continued)

Site = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA	2599.00	573.00	3570.00
LYNGBYA SP	34.00		34.00
CALOTHRIX SPP			
CHLOROPHYTA			6.00
CHLOROPHYTA I			
CHRYSOPHYTA	101.00		
MELOSIRA VARIANS	68.00		
CYCLOTELLA MENEGHINIANA		101.00	68.00
DIATOMA VULGARE		34.00	
FRAGILARIA LEPTOSTAURON	236.00		
FRAGILARIA PINNATA	34.00		
FRAGILARIA VAUCHERIAE		101.00	
SYNEDRA ULNA	34.00		
COCCONEIS PEDICULUS		68.00	
COCCONEIS PLACENTULA	236.00	135.00	170.00
ACHNANTHES MINUTISSIMA	34.00		
AMPHIPLEURA PELLUCIDA			

2.4.4.778

APPENDIX E-10-2 (Continued)

Site = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
GYROSIGMA ACUMINATUM	.60	1.00	34.00
PLEUROSIGMA DELICATULUM	.60		.30
NAVICULA CRYPTOCEPHALA	1148.00	337.00	748.00
NAVICULA MINIMA			34.00
NAVICULA SALINARUM VAR. INTERMEDIA	1991.00	978.00	646.00
NAVICULA TRIPUNCTATA	945.00	236.00	442.00
NAVICULA VAUCHERIAE			34.00
NAVICULA VIRIDULA	169.00	202.00	34.00
CALONEIS AMPHISBAENA		34.30	.30
CALONEIS BACILLUM		34.00	
CALONEIS VENTRICOSA			34.00
PINNULARIA VIRIDIS			.30
AMPHORA OVALIS VAR. PEDICULUS	1384.00	34.00	1836.00
CYMBELLA AFFINIS	101.00	169.00	238.00
CYMBELLA MEXICANA	1.00	34.00	.60
GOMPHONEMA OLIVACEUM	337.00	135.00	238.00
GOMPHONEMA VENTRICOSUM	270.00	202.00	136.00
EPITHEMIA SOREX	2599.00	2261.00	1598.00
RHOPALODIA GIBBA	68.00	34.00	
RHOPALODIA GIBBERULA			34.00

2.4.4.779

APPENDIX E-10-2 (Continued)

Site = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYLINDROTHECA GRACILIS	34.00		
NITZSCHIA ACICULARIS		34.00	
NITZSCHIA APICULATA			68.00
NITZSCHIA CHASEI	236.00	270.00	170.00
NITZSCHIA DISSIPATA	2768.00	2126.00	2550.00
NITZSCHIA FRUSTULUM	337.00	270.00	1326.00
NITZSCHIA GRACILIS	34.00		68.00
NITZSCHIA PALEACEA	101.00		68.00
NITZSCHIA LINEARIS	68.00	34.00	
NITZSCHIA PALEA	68.00		68.00
NITZSCHIA SIGMOIDEA	.30		
CYMATOPLEURA SOLEA		.30	1.20
SURIRELLA OVATA			102.00

2.4.4.780

APPENDIX E-10-2 (Continued)

Site = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	1789.00	697.00	3366.00
CALOTHRIX SPP	101.00	17.00	170.00
CHLOROPHYTA			
CLADOPHORA SPP		119.00	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA	34.00		
DIATOMA VULGARE	34.00	17.00	102.00
FRAGILARIA CONSTRUENS			34.00
FRAGILARIA PINNATA			136.00
FRAGILARIA VAUCHERIAE	101.00		
SYNEDRA ACUS	68.00		
SYNEDRA ULNA			1.50
ACHNANTHES MINUTISSIMA	337.00	51.00	204.00
NAVICULA CRYPTOCEPHALA	1316.00	357.00	748.00
NAVICULA MINIMA	68.00	17.00	34.00
NAVICULA SECURIGERA VAR. INTERMEDIA	506.00	204.00	646.00

2.4.4.781

APPENDIX E-10-2 (Continued)

Site = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA TRIPUNCTATA	236.00	85.00	272.00
NAVICULA VIRIDULA	101.00		34.00
AMPHORA OVALIS VAR. PEDICULUS	5569.00	527.00	34.00
CYMATELLA AFFINIS	34.00	34.00	102.00
CYMBELLA SINUATA	675.00	272.00	68.00
CYMBELLA VENTRICOSA	34.00		102.00
CYMPHONEMA INTRICATUM		17.00	
CYMPHONEMA OLIVACEUM	101.00	66.00	170.00
CYMPHONEMA VENTRICOSUM	34.00		34.00
EPITHEMIA SOREX	18664.00	6341.00	14688.00
ROPALODIA GIBBA	34.00	51.00	10.00
FITZSCHIA CAPITELLATA			34.00
NITZSCHIA CHASEI	135.00	51.00	68.00
NITZSCHIA DISSIPATA	1822.00	561.00	1054.00
NITZSCHIA FRUSTULUM	747.00	476.00	544.00
NITZSCHIA GRACILIS		17.00	34.00
NITZSCHIA PELEATICA			102.00
NITZSCHIA LINEARIS	34.00		
NITZSCHIA PALEA		17.00	68.00
SURIRELLA OVATA	68.00		

2.4.4.782

APPENDIX E-10-2 (Continued)

Site = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	2092.00	1156.00	238.00
CALOTHRIX SPP	68.00	408.00	
CHLOROPHYTA			
CLADOPHORA SPP		68.00	
CHRYSOPHYTA			
PICHECA LACUSTRIS			238.00
DIATOMA VULGARE		68.00	34.00
FRAGILARIA LEPTOSTAURON			34.00
FRAGILARIA VAUCHERIAE	101.00		34.00
SYNEDRA ULNA			34.00
CYCLOTELLA PEDICULUS		34.00	34.00
CYCLOTELLA PLACENTULA	68.00	68.00	102.00
ACHNANTHES LANCEOLATA	34.00		
ACHNANTHES MINUTISSIMA	34.00		68.00
AMPHIPLEURA PELLUCIDA			34.00
GYROSIGMA ACUMINATUM	.60	1.50	3.00

APPENDIX E-10-2 (Continued)

Site = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
PLEUROSIGMA DELICATULUM		.30	1.00
NAVICULA CRYPTOCEPHALA	1181.00	1088.00	1088.00
NAVICULA SPICULA			136.00
NAVICULA SALINARUM VAR. INTERMEDIA	506.00	850.00	646.00
NAVICULA SUBHAMULATA	68.00	68.00	
NAVICULA TRIPUNCTATA	438.00	272.00	340.00
NAVICULA VAUCHERIAE			34.00
NAVICULA VIRIDULA		34.00	34.00
CALONEIS BACILLUM			34.00
AMPHORA OVALIS VAR. PEDICULUS	641.00	3434.00	2040.00
CYMBELLA AFFINIS	34.00	68.00	102.00
CYMBELLA SINUATA			102.00
CYMBELLA VENTRICOSA			68.00
GOMPHONEMA INSIGNATUM	68.00		68.00
GOMPHONEMA OLIVACEUM	135.00	204.00	68.00
GOMPHONEMA PARVULUM			34.00
GOMPHONEMA VENTRICOSUM	34.00		34.00
EPITHEMIA SOREX	5974.00	5916.00	7004.00
RHOPALODIA GIBBA	135.00	136.00	68.00
NITZSCHIA PARVULA			34.00

APPENDIX E-10-2 (Continued)

Site = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA CHASEI	270.00	238.00	272.00
NITZSCHIA DISSIPATA	2025.00	1836.00	1700.00
NITZSCHIA FRUSTULUM	405.00	374.00	986.00
NITZSCHIA GRACILIS		34.00	
NITZSCHIA PALEA	135.00		34.00
NITZSCHIA SIGMOIDEA	.30	.30	1.00
CYMATOPLEURA SOLEA	1.00	2.00	
SURIRELLA OVATA	34.00		68.00

APPENDIX E-10-2 (Continued)

Site = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA	2584.00	4352.00	6052.00
LYNGBYA SPP	136.00	306.00	748.00
CALOTHRIX SPP			
CHLOROPHYTA			272.00
CLADOPHORA SPP			
CHRYSOPHYTA	34.00		
CYCLOTELLA MENEGHINIANA			68.00
DIATOMA HIEMALE	34.00	204.00	816.00
DIATOMA VULGARE	102.00		
FRAGILARIA PINNATA	34.00	34.00	136.00
FRAGILARIA VAUCHERIAE	34.00	34.00	
SYNEDRA ULNA	68.00		
COCCONEIS PEDICULUS			68.00
COCCONEIS PLACENTULA	612.00	170.00	2176.00
ACHNANTHES MINUTISSIMA	85.00	850.00	2380.00
NAVICULA CRYPTOCEPHALA	986.00	442.00	1156.00
NAVICULA SALINARUM VAR. INTERMEDIA			

APPENDIX E-10-2 (Continued)

Site = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA BIPUNCTATA	102.00	136.00	816.00
NAVICULA VAUCHERIAE			68.00
NAVICULA VIRIDULA			68.00
NAVICULA SP 2	34.00		
AMPHORA OVALIS VAR. PEDICULUS	306.00		476.00
CYMBELLA AFFINIS	578.00	102.00	816.00
CYMBELLA LANCEOLATA		.30	
CYMBELLA MEXICANA			1.00
CYMBELLA PROSTRATA		238.00	
CYMBELLA SINUATA		34.00	
CYMBELLA VENTRICOSA		136.00	136.00
GOMPHONEMA INTRICATUM		34.00	68.00
GOMPHONEMA OLIVACEUM	102.00	680.00	1700.00
GOMPHONEMA VENTRICOSUM	748.00	170.00	2040.00
EPITHEMIA SUBLX	11458.00	14756.00	31008.00
RHOPALODIA GIBBA	68.00	3.30	68.00
NITZSCHIA CHASEI	850.00	68.00	884.00
NITZSCHIA DISSIPATA	2210.00	952.00	6528.00
NITZSCHIA FRUSTULUM	2074.00	408.00	2720.00
NITZSCHIA PALEACEA			68.00

APPENDIX E-10-2 (Continued)

Site = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS		34.00	
NITZSCHIA PALEA	34.00	136.00	136.00
CYMATOPLEURA SOLEA		.30	

APPENDIX E-10-2 (Continued)

Site = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	3366.00	510.00	
CALLITHRIX SPP	204.00		
CHLOROPHYTA			
CLADOPHORA SPP	34.00	34.00	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			34.00
DIATOMA VULGARE	408.00	238.00	
FRAGILARIA PINNATA	34.00		
NAVICULA VAUCHERIAE	68.00		34.00
SYNEDRA DELICATISSIMA	1.00		
SYNEDRA ULNA			1.00
COCCONEIS PEDICULUS	34.00	102.00	34.00
COCCONEIS PLACENTULA	34.00	34.00	34.00
ACHNANTHES MINUTISSIMA	272.00	578.00	408.00
GYROSIGMA ACUMINATUM	.30	34.00	1.00
NAVICULA CRYPTOCEPHALA	1768.00	2278.00	816.00

APPENDIX E-10-2 (Continued)

Site = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA MINIMA		170.00	
NAVICULA SALINARUM VAR. INTERMEDIA	1054.00	1258.00	680.00
NAVICULA TRIPUNCTATA	476.00	680.00	68.00
NAVICULA VIRIDULA	102.00	238.00	34.00
CALONEIS AMPHISBAENA			1.00
CALONEIS VENTRICOSA		34.00	
AMPHORA OVALIS VAR. PEDICULUS	2856.00	2958.00	68.00
CYMBELLA AFFINIS	204.00	306.00	102.00
CYMBELLA MEXICANA	.30		1.00
CYMBELLA SINUATA	68.00		
CYMBELLA VENTRICOSA		170.00	
GOMPHONEMA INTRICATUM	34.00		
GOMPHONEMA OLIVACEUM	544.00	612.00	34.00
GOMPHONEMA PARVULUM	34.00		
GOMPHONEMA VENTRICOSUM	306.00	204.00	34.00
GOMPHONEMA SP 1	34.00		
EPITHEMIA SOREX	12376.00	6120.00	5780.00
RHOPALODIA GIBBA	102.00		68.00
NITZSCHIA APICULATA	34.00		
NITZSCHIA CHASEI	578.00	714.00	476.00

APPENDIX E-10-2 (Continued)

Site = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA DISSIPATA	4964.00	4998.00	3876.00
NITZSCHIA FRUSTULUM	646.00	1428.00	374.00
NITZSCHIA PELSATICA		102.00	34.00
NITZSCHIA HUNGARICA		102.00	
NITZSCHIA LINEARIS		34.00	
NITZSCHIA PALEA	34.00	34.00	
NITZSCHIA SIGMOIDEA			.30
SURIRELLA OVATA	68.00	34.00	
SURIRELLA OVALIS		34.00	

APPENDIX E-10-2 (Continued)

Site = 33

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	220.00	2310.00	1980.00
CALOTHRIX SPP		88.00	1936.00
CHRYSOPHYTA			
DIATOMA VULGARE	66.00	44.00	22.00
FRAGILARIA LEPTOSTAURON		22.00	
SYNEDRA AMPHICEPHALA	44.00		
COCCONEIS PEDICULUS	66.00		
ACHNANTHES MINUTISSIMA	352.00	22.00	44.00
CYMBELLA ACUMINATUM	.20		.20
NAVICULA CRYPTOCEPHALA	352.00	198.00	264.00
NAVICULA SALINARUM			132.00
NAVICULA SALINARUM VAR. INTERMEDIA	484.00	154.00	
NAVICULA TRIPUNCTATA	110.00	22.00	132.00
NAVICULA VIRIDULA	44.00	44.00	22.00
NAVICULA SP 2	66.00	22.00	
CALONEIS AMPHISBAENA		.40	.20
AMPHORA OVALIS VAR. PEDICULUS	1452.00	22.00	22.00
CYMBELLA TURGIDA	286.00		88.00

APPENDIX E-10-2 (Continued)

Site = 33

TAXON	REP A	REP B	REP C
	(CELLS/SQUART MM)		
CHRYSOPHYTA			
CYMBELLA MEXICANA	22.00	.20	
CYMBELLA SINUATA	374.00		
GOMPHONEMA OLIVACEUM	3168.00	88.00	132.00
GOMPHONEMA PARVULUM	66.00		
GOMPHONEMA VENTRICOSUM	418.00		22.00
GOMPHONEMA SP 1			66.00
EPITHEMIA SOREX	814.00	814.00	2156.00
RHOPALODIA GIBBA		22.10	22.00
NITZSCHIA ACICULARIS	22.00		
NITZSCHIA CHASEI	22.00	22.00	
NITZSCHIA DISSIPATA	1166.00	110.00	418.00
NITZSCHIA FRUSTULUM	990.00	66.00	286.00
NITZSCHIA PALEA	22.00	22.00	44.00
CYMATOPLEURA SOLEA	.20	.40	

2.4.4.793

APPENDIX E-10-2 (Continued)

Site = 34

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	233.00	1020.00	49.00
CALOTHRIX SPP	3.00	238.00	29.00
CHLOROPHYTA			
CLADOPHORA SPP			49.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA		34.00	
DIATOMA VULGARE			3.00
FRAGILARIA PINNATA			3.00
FRAGILARIA VAUCHERIAE	10.00	34.00	
COCCONEIS PLACENTULA			2.00
ACHNANTHES MINUTISSIMA	54.00	136.00	
CYMBELLA ACUMINATUM		.60	
NAVICULA CRYPTOCEPHALA	20.00	918.00	27.00
NAVICULA SALINARUM VAR. INTERMEDIA	27.00	918.00	22.00
NAVICULA SUBHAMULATA	3.00	34.00	
NAVICULA TRIPUNCTATA	3.00	34.00	8.00

APPENDIX E-10-2 (Continued)

Site = 34

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA VIRIDULA	7.00	34.00	2.00
ACHNANTHES EXILIS VAR. PEDICULUS	7.00	170.00	10.00
CYMBELLA AFFINIS	14.00	170.00	8.00
CYMBELLA MEXICANA		.60	
CYMBELLA SINUATA	17.00	34.00	24.00
CYMBELLA VENTRICOSA	3.00	68.00	
GOMPHONEMA INTRICATUM	3.00		8.00
GOMPHONEMA OLIVACEUM	14.00	272.00	39.00
GOMPHONEMA VENTRICOSUM		170.00	4.00
EPITHEMIA SOREX	118.00	39576.00	98.00
RHOPALODIA GIBBA	.20	79.00	.12
RHOPALODIA GIBBERULA		34.00	
NITZSCHIA CHASEI		102.00	
NITZSCHIA DISSIPATA	4.00	3060.00	15.00
NITZSCHIA FRUSTULUM	10.00	442.00	3.00
NITZSCHIA HUNGARICA		136.00	
NITZSCHIA PALEA	44.00	34.00	
SURIRELLA OVATA		68.00	

2.4.4.795

APPENDIX E-10-2 (Continued)

Site = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	340.00	2006.00	714.00
CALOTHRIX SPP	204.00	408.00	204.00
CHRYSOPHYTA			
DIATOMA VULGARE	408.00	204.00	34.00
FRAGILARIA VAUCHERIAE	68.00		
SYNEDRA ULNA	68.00		.30
COCCONEIS PEDICULUS		68.00	
COCCONEIS PLACENTULA		34.00	
ACHNANTHES MINUTISSIMA	408.00	238.00	578.00
NAVICULA CRYPTOCEPHALA	2040.00	1122.00	
NAVICULA SALINARUM VAR. INTERMEDIA	884.00	578.00	340.00
NAVICULA TRIPUNCTATA	340.00	136.00	204.00
NAVICULA VIRIDULA		34.00	34.00
CALONEIS AMPHISBAENA		1.00	.30
AMPHORA OVALIS VAR. PEDICULUS	476.00	4522.00	
CYMBELLA AFFINIS	136.00	68.00	68.00
CYMBELLA CISTULA	204.00		
CYMBELLA VENTRICOSA		204.00	

APPENDIX E-10-2 (Continued)

Site = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
GOMPHONEMA INTRICATUM			68.00
GOMPHONEMA OLIVACEUM	272.00	476.00	102.00
GOMPHONEMA VERTICOSUM	68.00		
GOMPHONEMA SP 1	204.00	68.00	68.00
EPITHEMIA SOREX	62704.00	22542.00	9758.00
PINNULARIA SUBPA	8.00	34.00	
NITZSCHIA CHASEI	68.00	68.00	
NITZSCHIA DISSIPATA	2108.00	1394.00	170.00
NITZSCHIA FRUSTULUM	1020.00	272.00	918.00
NITZSCHIA HOLSATICA		34.00	
NITZSCHIA PALEA		34.00	

2.4.4.797

RBOSP PROGRESS REPORT

APPENDIX E-10-3

DRY AND ORGANIC WEIGHT OF PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-10-3

DRY AND ORGANIC WEIGHT OF PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]

Station Replicate	Dry Weight ($g/50cm^2$)	Organic Weight ($g/50cm^2$)
1-A	0.2164	0.0318
1-B	0.2254	0.0360
1-C	0.1803	0.0236
2-A	0.0893	0.0151
2-B	0.1212	0.0195
2-C	0.5525	0.0818
3-A	0.0988	0.0156
3-B	0.0990	0.0187
3-C	0.1073	0.0175
4-A	0.1398	0.0209
4-B	0.1491	0.0242
4-C	0.0925	0.0125
5-A	0.4068	0.0896
5-B	0.5745	0.1124
5-C	0.4480	0.0824
7-A	0.2208	0.0305
7-B	0.3295	0.0412
7-C	0.1920	0.0273
8-A	0.2374	0.0488
8-B	0.2569	0.0710
8-C	0.1713	0.1103
9-A	0.3468	0.0429
9-B	0.4286	0.0568
9-C	0.3886	0.0398
12-A	1.5933	0.0828
12-B	4.5057	0.2011
12-C	1.1081	0.0581
13-A	0.3966	0.1019
13-B	0.2666	0.0699
13-C	1.1288	0.1814
14-A	0.1471	0.0287
14-B	0.0810	0.0168
14-C	0.1074	0.0239
19-A	0.8996	0.1365
19-B	1.0653	0.1465
19-C	4.9627	0.7927
20-A	0.3309	0.0454
20-B	0.3254	0.0516
20-C	0.4074	0.0420

[1] Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling. No samples from 17 due to lack of rocks.

APPENDIX E-10-3 (Continued)

Station Replicate	Dry Weight ($g/50cm^2$)	Organic Weight ($g/50cm^2$)
21-A	0.5131	0.0560
21-B	0.2855	0.0434
21-C	0.6228	0.0625
22-A	0.5011	0.0624
22-B	0.2316	0.0369
22-C	0.6312	0.0770
23-A	3.5313	0.4642
23-B	4.5383	0.3997
23-C	3.3124	0.3904
24-A	12.3838	0.7952
24-B	19.9018	1.1940
24-C	4.4697	0.3064
25-A	3.5481	0.4190
25-B	7.5530	0.5190
25-C	5.8270	0.5875
26-A	9.5235	0.6720
26-B	12.1300	0.9588
26-C	4.9782	0.4131
27-A	2.0516	0.2269
27-B	7.2560	0.6227
27-C	7.6202	0.5694
28-A	3.0023	0.0991
28-B	1.2891	0.0478
28-C	8.1774	0.1830
29-A	3.6894	0.4848
29-B	2.8555	0.3552
29-C	2.2708	0.2841
30-A	4.7341	0.3310
30-B	2.6468	0.2786
30-C	20.5472	0.8628
31-A	2.0412	0.3473
31-B	3.8917	0.4383
31-C	3.5766	0.2299
32-A	6.7034	0.5333
32-B	3.4973	0.2800
32-C	3.0544	0.2053
33-A	1.9873	0.2502
33-B	1.4401	0.1216
33-C	1.7729	0.2383
34-A	1.8665	0.1852
34-B	1.7989	0.3065
34-C	3.4405	0.3476
35-A	6.2992	0.5873
35-B	6.0794	0.5795
35-C	12.8726	1.0127

RBOSP PROGRESS REPORT

APPENDIX E-10-4

CHLOROPHYLL a OF PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-10-4

CHLOROPHYLL a OF PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]
(Data are expressed as mg Chlorophyll a per cm^2.)

Station	Replicate		
	A	B	C
1	.0023	.0028	.0034
2	.0004	.0005	.0005
3	.0006	.0005	.0001
4	.0009	.0011	.0018
5	.0021	.0068	.0042
7	.0024	.0021	.0027
8	.0058	.0041	.0042
9	.0005	.0028	.0020
12	.0001	.0003	.0002
13	.0124	.0134	.0090
14	.0034	.0113	.0053
19	.0160	.0096	.0049
20	.0020	.0034	.0017
21	.0006	.0007	.0012
22	.0004	.0003	.0028
23	.0113	.0181	.0059
24	.0066	.0107	.0184
25	.0143	.0106	.0157
26	.0156	.0088	.0112
27	.0157	.0075	.0170
28	.0142	.0041	.0069
29	.0079	.0075	.0070
30	.0056	.0104	.0074
31	.0090	.0228	.0036
32	.0116	.0071	.0052
33	.0021	.0094	.0029
34	.0025	.0133	.0053
35	.0064	.0070	.0051

[1] Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling. Insufficient rocks to collect at Station 17.

RBOSP PROGRESS REPORT

APPENDIX E-10-5

ALGAL TAXA OBSERVED IN THE PERIPHYTON FROM ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-10-5

ALGAL TAXA OBSERVED IN THE PERIPHYTON FROM ARTIFICIAL SUBSTRATES
DURING RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

CYANOPHYTA

Calothrix spp.
Lyngbya spp.

CHLOROPHYTA

Scenedesmus abundans
Ulothrix spp.
Zygnema spp.

CHRYSOPHYTA

Achnanthes lanceolata
Achnanthes minutissima
Amphora ovalis var. *pediculus*
Amphiprora alata
Caloneis amphisbaena
Caloneis bacillum
Cocconeis pediculus
Cocconeis placentula
Cyclotella meneghiniana
Cymatopleura solea
Cymbella affinis
Cymbella mexicana
Cymbella pusilla
Cymbella sinuata
Cymbella ventricosa
Diatoma vulgare
Epithemia sorex
Epithemia turgida
Fragilaria construens
Fragilaria leptostauron
Fragilaria pinnata
Gomphonema sp. 1
Gomphonema intricatum
Gomphonema olivaceum
Gomphonema parvulum
Gomphonema ventricosum
Gyrosigma acuminatum
Navicula arvensis
Navicula cryptocephala
Navicula salinarum var. *intermedia*

Navicula tripunctata
Navicula virdula
Navicula sp. 1
Nitzschia acicularis
Nitzschia amphibia
Nitzschia apiculata
Nitzschia capitellata
Nitzschia chasei
Nitzschia dissipata
Nitzschia frustulum
Nitzschia gracilis
Nitzschia holsatica
Nitzschia latens
Nitzschia linearis
Nitzschia microcephala
Nitzschia palea
Nitzschia sigmoidea
Pleurosigma delicatulum
Rhopalodia gibba
Surirella ovata
Surirella ovalis
Synedra minuscula
Synedra ulna
Thalassiosira fluviatilis

RBOSP PROGRESS REPORT

APPENDIX E-10-6

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON FROM ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-10-6

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON FROM
ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

Site = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
ZYGNEMA SPP			23.00
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS		34.00	11.00
CYCLOTELLA MENEGHINIANA		34.00	45.00
SYNEDRA TENUSCULA	18.00	11.00	68.00
SYNEDRA PULCHELLA	27.00	90.00	23.00
ACHNANTHES MINUTISSIMA	5490.00		4124.00
GYROSIGMA ACUMINATUM		1.00	11.00
NAVICULA ARVENSIS			11.00
NAVICULA CRYPTOCEPHALA	36.00	8181.00	124.00
NAVICULA SALINARUM VAR. INTERMEDIA	9.00		
NAVICULA VIRIDULA			11.00
NAVICULA SP 1	27.00	11.00	23.00
CYMBELLA PUSILLA	162.00	181.00	147.00
CAMPYLODISCUS INTRICATUS	54.00	124.00	181.00
ASTERIONELLA ALATA		11.00	34.00
EPITHEMIA GIBBA	9.00		
NITZSCHIA ARTICULATA		11.00	

2.4.4.807

RBOSP PROGRESS REPORT

APPENDIX E-10-6 (Continued)

Site = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA CAPITELLATA		11.00	
NITZSCHIA FRUSTULUM	54.00	124.00	225.00
NITZSCHIA LATENS	9.00		
NITZSCHIA MICROCEPHALA	9.00		
NITZSCHIA PALEA	54.00	113.00	158.00
SURIRELLA OVATA		23.00	
SURIRELLA OVALIS		.60	

APPENDIX E-10-6 (Continued)

Site = 21

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA	60.00		
ACHNANTHES MINUTISSIMA	4147.00		
GYROSIGMA ACUMINATUM	.50		
NAVICULA CRYPTOCEPHALA	34.00		
NAVICULA SP 1	56.00		
CYMBELLA PUSILLA	305.00		
GOMPHONEMA INTRICATUM	11.00		
RHOPALODIA GIBBA	.10		
NITZSCHIA FRUSTULUM	79.00		
NITZSCHIA PALEA	181.00		
SURIRELLA OVALIS	.60		

2.4.4.809

APPENDIX E-10-6 (Continued)

Site = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	27.00	18.00	9.00
CALLITHRIX SPP	9.00		
CHLOROPHYTA			
ULOTHRIX SPP			1.20
SCENEDESMUS ABUNDANS			36.00
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS			9.00
CYCLOTELLA MENEGHINIANA	36.00	24.00	18.00
DIATOMA VULGARE	9.00	12.00	18.00
FRAGILARIA CONSTRUENS			27.00
FRAGILARIA LEPTOSTAURON	18.00		
FRAGILARIA PINNATA		12.00	
COCCONEIS PEDICULUS		60.00	
COCCONEIS PLACENTULA	63.00	108.00	207.00
ACHNANTHES LANCEOLATA		6.00	9.00
ACHNANTHES MINUTISSIMA	18.00	72.00	117.00

APPENDIX E-10-6 (Continued)

Site = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
GYROSIGMA ACUMINATUM	9.00	.10	.10
NAVICULA CRYPTOCEPHALA	117.00	42.00	90.00
NAVICULA SALINARUM VAR. INTERMEDIA	279.00	192.00	270.00
NAVICULA TRIPUNCTATA	27.00	12.00	27.00
NAVICULA VIRIDULA	27.00	12.00	9.00
CALONEIS AMPHISBAENA	.40	6.10	.10
CALONEIS LACILLUM		6.00	
AMPHORA OVALIS VAR. PEDICULUS	9.00	12.00	9.00
CYMBELLA AFFINIS	27.00	36.00	27.00
CYMBELLA MEXICANA	9.00	.60	1.00
CYMBELLA STIGMATA	18.00		
CYMBELLA VENTRICOSA		6.00	
GOMPHONEMA INTRICATUM	27.00	12.00	54.00
GOMPHONEMA OLIVACEUM	63.00	54.00	108.00
GOMPHONEMA PARVULUM	9.00	6.00	
GOMPHONEMA VIBRIOIDUM	18.00	12.00	144.00
EPITHEMIA SOREX	1008.00	606.00	1251.00
EPITHEMIA TURGIDA			.20
RHOPALODIA GIBBA	18.00	6.00	27.00
NITZSCHIA ACICULARIS	27.00		

2.4.4.811

APPENDIX E-10-6 (Continued)

Site = 27

TAXUM	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA CAPITELLATA			9.00
NITZSCHIA CHASEI	9.00	12.00	45.00
NITZSCHIA DISSIPATA	639.00	180.00	378.00
NITZSCHIA FRUSTULUM	144.00	108.00	198.00
NITZSCHIA GRACILIS		6.00	27.00
NITZSCHIA HUNSATICA			27.00
NITZSCHIA PALEA		6.00	
NITZSCHIA SIGMOIDEA		.10	.10
CYMATOPLEURA SOLEA	.60	.30	.60
SURIRELLA OVATA		12.00	9.00
SURIRELLA OVALIS	.08	.50	

2.4.4.812

APPENDIX E-10-6 (Continued)

Site = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP		54.00	216.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA	9.00		18.00
DIATOMA VULGARE		9.00	90.00
FRAGILARIA CONSTRUENS			54.00
FRAGILARIA PINNATA			18.00
COCCONEIS PEDICULUS			36.00
COCCONEIS PLACENTULA	27.00		36.00
ACHNANTHES MINUTISSIMA	126.00	81.00	198.00
GYROSIGMA ACUMINATUM	.08	.08	1.00
PLEUROSIGMA DELICATULUM	.08		
NAVICULA CRYPTOCEPHALA	117.00	153.00	486.00
NAVICULA SALINARUM VAR. INTERMEDIA	63.00	72.00	828.00
NAVICULA TRIPUNCTATA	36.00	27.00	360.00
NAVICULA VIRIDULA			54.00
CALONEIS AMPHISBAENA		.08	
AMPHORA OVALIS VAR. PEDICULUS	27.00	9.00	72.00
CYMBELLA AFFINIS	18.00		126.00

APPENDIX E-10-6 (Continued)

Site = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA TAXICOLA	.16		.60
CYMBELLA FUSILLA		9.00	
CYMBELLA VENTRICOSA			18.00
GOMPHONEMA CONSTRICTUM			18.00
GOMPHONEMA INTRICATUM	27.00		216.00
GOMPHONEMA OLIVACEUM	135.00	261.00	468.00
GOMPHONEMA PARVULUM		18.00	
GOMPHONEMA VENTRICOSUM			54.00
GOMPHONEMA SP. 1	18.00		
MELOSIRA VARIANS	261.00	135.00	1584.00
RHOPALODIA GIBBA	18.00		18.00
NITZSCHIA AMPHIBIA	27.00		
NITZSCHIA CAPITELLATA			18.00
NITZSCHIA CLOSEI		27.00	18.00
NITZSCHIA DISSIPATA	612.00	414.00	4014.00
NITZSCHIA FRUSTULUM	207.00	117.00	486.00
NITZSCHIA LINEARIS			36.00
NITZSCHIA PALEA	9.00		36.00
NITZSCHIA SIGMOIDEA	.08		.10
SYNEDRA ULNA	.05		1.00

APPENDIX E-10-6 (Continued)

Site = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVATA			36.00
SURIRELLA OVALIS		.08	.30

APPENDIX E-10-6 (Continued)

Site = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	45.00		7.00
CALOTHRIX SPP	76.00		
CHRYSOPHYTA			
DIATOMA VULGARE	4.00	4.00	9.00
FRAGILARIA LEPTOSTAURON	4.00		
FRAGILARIA PINNATA			2.00
FRAGILARIA VAUCHERIAE	4.00		5.00
SYNEDRA ULNA	.60		
COCCONEIS PEDICULUS		4.00	
COCCONEIS PLACENTULA	56.00	14.00	7.00
ACHNANTHES LANCEOLATA	4.00		
ACHNANTHES MINUTISSIMA		18.00	7.00
NAVICULA CRYPTOCEPHALA	99.00	76.00	61.00
NAVICULA SALINARUM VAR. INTERMEDIA	68.00	76.00	54.00
NAVICULA TRIPUNCTATA	4.00	22.00	
NAVICULA VIRIDULA	9.00		7.00
CALONEIS AMPHISBAENA	.04		.04
CALONEIS BACILLUM			2.00

APPENDIX E-10-6 (Continued)

Site = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS	36.00	40.00	9.00
CYMBELLA MEXICANA	.04		
CYMBELLA SINUATA	4.00		
CYMBELLA VENTRICOSA	9.00		20.00
GOMPHONEMA INTRICATUM	4.00	32.00	
GOMPHONEMA OLIVACEUM	189.00	144.00	391.00
GOMPHONEMA PARVULUM	9.00	4.00	20.00
GOMPHONEMA VENTRICOSUM	22.00		7.00
GOMPHONEMA SP 1	4.00		
EPITHEMIA SOREX	198.00	540.00	241.00
RHOPALODIA GIBBA	.10	.04	
NITZSCHIA ACICULARIS			9.00
NITZSCHIA APICULATA	4.00		
NITZSCHIA CAPITELLATA	4.00		
NITZSCHIA DISSIPATA	54.00	72.00	99.00
NITZSCHIA FRUSTULUM	18.00	45.00	52.00
NITZSCHIA PALEA	54.00	18.00	
CYMATOPLEURA SOLEA	.08		

RBOSP PROGRESS REPORT

APPENDIX E-10-7

DRY AND ORGANIC WEIGHT OF PERIPHYTON FROM ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-10-7

DRY AND ORGANIC WEIGHT OF PERIPHYTON FROM ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]

Station Replicate	Dry Weight ($g/50cm^2$)	Organic Weight ($g/50cm^2$)
20-A	0.4634	0.0528
20-B	0.3615	0.0365
20-C	0.2706	0.0299
21-A	0.4830	0.0587
27-A	0.2647	0.0342
27-B	0.1823	0.0262
27-C	0.2263	0.0278
29-A	0.5591	0.0414
29-B	0.4978	0.0362
29-C	0.5798	0.0483
35-A	0.0734	0.0124
35-B	0.0417	0.0069
35-C	0.0713	0.0107

[1] All or some substrates at Stations 21 and 23 were lost or destroyed.

RBOSP PROGRESS REPORT

APPENDIX E-10-8

CHLOROPHYLL a CONCENTRATIONS FROM ARTIFICIAL SUBSTRATES DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-10-8

CHLOROPHYLL a CONCENTRATIONS FROM ARTIFICIAL SUBSTRATES DURING RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]
(Data are expressed as mg/cm^2)

Station	Replicate		
	A	B	C
20	.0017	.0017	.0017
21	.0010		
27	.0008	.0006	.0008
29	.0052	.0041	.0040
35	.0007	<.0000	.0004

[1] Some or all of the substrates from Stations 21 and 23 were destroyed or lost.

APPENDIX E-11-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-11-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

CYANOPHYTA

Anabaena spp.
Calothrix spp.
Lyngbya spp.

CHLOROPHYTA

Cladophora spp.
Closterium spp.
Closterium moniliferum
Cosmarium radiosum
Stigeoclonium spp.

CHRYSOPHYTA

Achnanthes lanceolata
Achnanthes minutissima
Amphora sp. 1
Amphora ovalis
Amphora ovalis var. pediculus
Amphipleura pellucida
Bicoeca lacustris
Caloneis amphisbaena
Caloneis bacillum
Caloneis ventricosa
Cocconeis pediculus
Cocconeis placentula
Cyclotella meneghiniana
Cylindrotheca gracilis
Cymatopleura solea
Cymbella sp. 1
Cymbella affinis
Cymbella mexicana
Cymbella microcephala
Cymbella prostrata
Cymbella sinuata
Cymbella ventricosa
Diatoma hiemale
Diatoma tenue var. elongatum
Diatoma vulgare
Epithemia sorex
Epithemia zebra

Fragilaria capucina
Fragilaria construens
Fragilaria leptostauron
Fragilaria pinnata
Fragilaria vaucheriae
Gomphonema intricatum
Gomphonema olivaceum
Gomphonema parvulum
Gomphonema ventricosum
Gyrosigma acuminatum
Hantzschia amphioxys
Mastogloia smithii
Meridion circulare
Navicula arvensis
Navicula capitata
Navicula cryptocephala
Navicula cuspidata
Navicula gregaria
Navicula minima
Navicula pelliculosa
Navicula pupula
Navicula radiosa
Navicula salinarum
Navicula salinarum var. intermedia
Navicula seminulum
Navicula subhamulata
Navicula tantula
Navicula tripunctata
Navicula virdula
Navicula sp. 1
Navicula sp. 2
Nitzschia acicularis
Nitzschia amphibia
Nitzschia apiculata
Nitzschia capitellata
Nitzschia chasei
Nitzschia denticula
Nitzschia dissipata
Nitzschia frustulum
Nitzschia holsatica
Nitzschia ignorata
Nitzschia latens
Nitzschia linearis
Nitzschia microcephala
Nitzschia palea
Nitzschia sigmoidea
Nitzschia vermicularis

Pinnularia brebissonii
Pinnularia viridis
Pleurosigma delicatulum
Rhoicosphenia curvata
Rhopalodia gibba
Rhopalodia gibberula
Stephanodiscus spp.
Stephanodiscus tenuis
Surirella ovata
Surirella ovalis
Synedra amphicephala
Synedra delicatissima
Synedra fasciculata
Synedra minuscula
Synedra pulchella
Synedra ulna
Thalassiosira fluviatilis

RBOSP PROGRESS REPORT

APPENDIX E-11-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-11-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975

SITE = 01

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	861.00	42.00	350.00
CALOTHRIX SPP		18.00	
CHRYSOPHYTA			
BICUECA LACUSTRIS	28.00	618.00	294.00
ACHNANTHES LANCEOLATA	7.00	12.00	84.00
ACHNANTHES MINUTISSIMA	995.00	648.00	4032.00
GYROSIGMA ACUMINATUM	.06	.30	.36
NAVICULA MINIMA			14.00
NAVICULA PELLICULOSA		12.00	
AMPHORA OVALIS VAR. PEDICULUS		6.00	
GOMPHONEMA INTRICATUM	14.00	78.00	196.00
RHOPALODIA GIBBA	.06		
SURIRELLA OVALIS		6.00	.24

RBOSP PROGRESS REPORT

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 02

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA			
BICOECA LACUSTRIS	396.00	1020.00	539.00
FRAGILARIA VAUCHERIAE			7.00
SYNEDRA AMPHICEPHALA	208.00	52.00	
ACHNANTHES LANCEOLATA	136.00	428.00	511.00
ACHNANTHES MINUTISSIMA	724.00	3500.00	1582.00
NAVICULA ARVENSIS	24.00	16.00	7.00
NAVICULA CRYPTOCEPHALA	120.00	12.00	
NAVICULA MINIMA	4.00		
NAVICULA SP 2	8.00		
AMPHORA OVALIS			7.00
CYMBELLA AFFINIS	24.00	8.00	
GOMPHONEMA INTRICATUM	12.00	12.00	14.00
NITZSCHIA FRUSTULUM	16.00	4.00	
NITZSCHIA HOLSATICA	196.00		
NITZSCHIA LATENS	4.00		
NITZSCHIA LINEARIS	4.00	.08	
NITZSCHIA PALEA	108.00	20.00	
SURIRELLA OVALIS	.40	.16	

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 03

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
BICOECA LACUSTRIS	27.00		
DIATOMA VULGARE	2.00		
ACHNANTHES LANCEOLATA			10.00
ACHNANTHES MINUTISSIMA	144.00	16.00	36.00
NAVICULA ARVENSIS	2.00	4.00	
NAVICULA CRYPTOCEPHALA	16.00	4.00	14.00
NAVICULA PELLICULOSA	27.00	8.00	36.00
NAVICULA SALINARUM VAR. INTERMEDIA	2.00		
NAVICULA VIRIDULA	3.00		
NAVICULA SP 1	4.00		10.00
NAVICULA SP 2	14.00	4.00	24.00
CALONEIS VENTRICOSA			2.00
CYMBELLA AFFINIS		2.00	
GOMPHONEMA INTRICATUM	70.00	2.00	52.00
EPITHEMIA SOREX		2.00	
NITZSCHIA DISSIPATA			2.00
NITZSCHIA FRUSTULUM	8.00		4.00
NITZSCHIA LATENS	2.00		
NITZSCHIA LINEARIS	.99	.08	4.00
NITZSCHIA PALEA	3.00	4.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 03

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVALIS	.02	2.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 04

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	902.00		816.00
CHRYSOPHYTA			
BICOECA LACUSTRIS	462.00		
MERIDION CIRCULARE	110.00		136.00
ACHNANTHES LANCEOLATA	264.00	2108.00	612.00
ACHNANTHES MINUTISSIMA	772.00	11764.00	49980.00
GYROSIGMA ACUMINATUM	.60	2.10	
NAVICULA ARVENSIS	352.00	816.00	952.00
NAVICULA CRYPTOCEPHALA	364.00	2278.00	1768.00
NAVICULA PELLICULOSA	66.00		408.00
NAVICULA SP 1	88.00	204.00	68.00
NAVICULA SP 2		102.00	
PINNULARIA BREBISSONII		34.00	
CYMBELLA AFFINIS	22.00		
GOMPHONEMA INTRICATUM	214.00	2550.00	6596.00
NITZSCHIA ACICULARIS	22.00		68.00
NITZSCHIA FRUSTULUM	44.00	68.00	68.00
NITZSCHIA HOLSATICA	22.00		68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 04

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS	352.00	272.00	68.00
NITZSCHIA PALEA	22.00	102.00	136.00
SURIRELLA ANGUSTATA			68.00
SURIPELLA OVATA			68.00
SURIRELLA OVALIS	.40	.60	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	35.00		
CHLOROPHYTA			
CLADOPHORA SPP	28.00		
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			34.00
DIATOMA TENUE VAR. ELONGATUM	28.00	22.00	102.00
FRAGILARIA VAUCHERIAE	7.00		
SYNEDRA AMPHICEPHALA	63.00	66.00	68.00
SYNEDRA DELICATISSIMA			34.00
SYNEDRA MINUSCULA	28.00		
COCCONEIS PLACENTULA	21.00		102.00
ACHNANTHES LANCEOLATA	14.00		34.00
ACHNANTHES MINUTISSIMA	407.00	16720.00	11866.00
MASTOGLOIA SMITHII		22.00	
PLEUROSIGMA DELICATULUM	.12		34.00
NAVICULA ARVENSIS	210.00	264.00	136.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA CRYPTOCEPHALA	77.00	110.00	204.00
NAVICULA MINIMA			34.00
NAVICULA RADIOSA	7.00	22.00	68.00
NAVICULA TANTULA		22.00	
NAVICULA SP 1	7.00	44.00	68.00
NAVICULA SP 2		22.00	
CALONEIS BACILLUM		22.00	
AMPHORA SP 1			34.00
CYMBELLA AFFINIS	140.00	110.00	
CYMBELLA MICROCEPHALA	14.00	264.00	34.00
CYMBELLA VENTRICOSA	238.00	110.00	204.00
GOMPHONEMA INTRICATUM	791.00	154.00	340.00
GOMPHONEMA SP 1	28.00	22.00	
EPITHEMIA ZEBRA		22.00	
RHOPALODIA GIBBA	7.00	.60	.30
RHOPALODIA GIBBERULA			68.00
NITZSCHIA ACICULARIS			34.00
NITZSCHIA FRUSTULUM	175.00	374.00	510.00
NITZSCHIA HOLSATICA	14.00		
NITZSCHIA LATENS			34.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 05

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA			
NITZSCHIA LINEARIS	7.00		
NITZSCHIA PALEA	21.00	22.00	102.00
NITZSCHIA SIGMOIDEA			.30
SURIRELLA OVATA	7.00		102.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 07

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	56.00	504.00	288.00
CHLOROPHYTA			
CLOSTERIUM SPP	.06		
CHRYSOPHYTA			
BICOECA LACUSTRIS		48.00	
ACHNANTHES LANCEOLATA		12.00	
ACHNANTHES MINUTISSIMA	206.00	2142.00	1836.00
GYROSIGMA ACUMINATUM		.05	.10
NAVICULA ARVENSIS		6.00	12.00
NAVICULA CRYPTOCEPHALA	49.00		
NAVICULA SP 1		12.00	
NAVICULA SP 2	7.00	6.00	
CALONEIS BACILLUM	7.00		
CYMBELLA AFFINIS		18.00	
GOMPHONEMA INTRICATUM	28.00	18.00	
NITZSCHIA DENTICULA			18.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 07

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA FRUSTULUM	14.00	30.00	24.00
NITZSCHIA LINEARIS		9.00	.05
NITZSCHIA PALEA		6.00	
SURIRELLA OVALIS	.06	.05	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 08

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
CALUTHRIX SPP			34.00
CHRYSOPHYTA			
MERIDION CIRCULARE		44.00	
SYNEDRA AMPHICEPHALA	7.00		
ACHNANTHES LANCEOLATA	147.00	3036.00	1122.00
ACHNANTHES MINUTISSIMA	105.00	11682.00	20604.00
NAVICULA ARVENSIS		198.00	272.00
NAVICULA CRYPTOCEPHALA	7.00	1320.00	306.00
NAVICULA PELLICULOSA			68.00
NAVICULA SALINARUM VAR. INTERMEDIA			34.00
NAVICULA TRIPUNCTATA		22.00	
NAVICULA SP 1		44.00	
NAVICULA SP 2		22.00	
AMPHORA OVALIS		22.00	
GOMPHONEMA INTRICATUM	14.00	1034.00	646.00
NITZSCHIA DENTICULA	7.00		
NITZSCHIA DISSIPATA		66.00	
NITZSCHIA FRUSTULUM		88.00	34.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 08

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS	7.00	66.00	204.00
NITZSCHIA PALEA		220.00	34.00
SURIRELLA OVATA	7.00	88.00	68.00
SURIRELLA OVALIS		22.00	.30

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 09

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
CALOTHRIX SPP		28.00	
CHRYSOPHYTA			
BICOECA LACUSTRIS	086.00	238.00	133.00
ACHNANTHES LANCEOLATA		7.00	
ACHNANTHES MINUTISSIMA	150.00	3724.00	1295.00
GYROSIGMA ACUMINATUM	.06	.18	.12
NAVICULA ARVENSIS	3.00	7.00	14.00
NAVICULA CRYPTOCEPHALA	9.00	42.00	28.00
NAVICULA SP 1		21.00	7.00
CALONEIS BACILLUM			7.00
CYMBELLA AFFINIS		7.00	
GOMPHONEMA INTRICATUM	6.00	7.00	7.00
EPITHEMIA SOREX			7.00
NITZSCHIA DENTICULA		63.00	28.00
NITZSCHIA FRUSTULUM	3.00	63.00	21.00
NITZSCHIA LINEARIS	.18	21.00	.72
NITZSCHIA PALEA	3.00		
SURIRELLA OVALIS		.12	7.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 13

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
STIGEOCLONIUM SPP			19.20
CHRYSOPHYTA			
DIATOMA HIEMALE	68.00		
MERIDION CIRCULARE	916.00	3468.00	3876.00
FRAGILARIA VAUCHERIAE	516.00	1632.00	2244.00
SYNEDRA AMPHICEPHALA	136.00		
ACHNANTHES LANCEOLATA	972.00	4964.00	2244.00
ACHNANTHES MINUTISSIMA	324.00	99999.00	94656.00
GYROSIGMA ACUMINATUM	1.80	2.40	
NAVICULA ARVENSIS		4352.00	4828.00
NAVICULA CRYPTOCEPHALA	724.00	20264.00	55216.00
NAVICULA PELLICULOSA	13672.00		
NAVICULA VIRIDULA			272.00
PINNULARIA BREBISSONII	.60		
CYMBELLA AFFINIS	496.00	2040.00	4148.00
GOMPHONEMA INTRICATUM	192.00	33932.00	28832.00
RHOPALODIA GIBBA		.60	
NITZSCHIA CAPITELLATA			136.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 13

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA FRUSTULUM		204.00	272.00
NITZSCHIA HOLSATICA			816.00
NITZSCHIA LINEARIS	204.00	68.00	476.00
NITZSCHIA PALEA	544.00	340.00	408.00
SURIRELLA OVATA	68.00		
SURIRELLA OVALIS		.60	272.60

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 14

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
STIGEOCLONIUM SPP	340.00	22.00	408.00
CLOSTERIUM MONILIFERUM		.40	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA	68.00	66.00	544.00
FRAGILARIA VAUCHERIAE			136.00
SYNEDRA AMPHICEPHALA	856.00	2200.00	16388.00
SYNEDRA FASCICULATA		136.00	
SYNEDRA MINUSCULA	136.00		
SYNEDRA ULNA		66.00	
ACHNANTHES LANCEOLATA	272.00	198.00	204.00
ACHNANTHES MINUTISSIMA	952.00	880.00	884.00
NAVICULA ARVENSIS		176.00	1020.00
NAVICULA CRYPTOCEPHALA	496.00	1364.00	4760.00
NAVICULA CUSPIDATA	.60	.80	1.80
NAVICULA MINIMA		22.00	
NAVICULA PELLICULOSA	816.00	22.00	
NAVICULA VIRIDULA	68.00		
NAVICULA SP 1	476.00	330.00	2584.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 14

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA SP 2	272.00	220.00	272.00
CALONEIS VENTRICOSA			68.00
PINNULARIA BREBISSONII	136.00	66.00	340.00
PINNULARIA VIRIDIS	.60	22.00	
CYMBELLA AFFINIS	136.00	22.00	
CYMBELLA VENTRICOSA	68.00		
GOMPHONEMA INTRICATUM	68.00	22.00	408.00
RHOPALODIA GIBBA			.60
HANTZSCHIA AMPHIOXYS			68.00
NITZSCHIA ACICULARIS	816.00	1518.00	14348.00
NITZSCHIA APICULATA			136.00
NITZSCHIA CAPITELLATA	136.00	176.00	612.00
NITZSCHIA DENTICULA	544.00	308.00	476.00
NITZSCHIA DISSIPATA			408.00
NITZSCHIA FRUSTULUM	840.00	1320.00	2448.00
NITZSCHIA HOLSATICA		22.00	476.00
NITZSCHIA LINEARIS		66.00	272.00
NITZSCHIA MICROCEPHALA		22.00	
NITZSCHIA PALEA	888.00	1628.00	4352.00
SURIRELLA OVALIS	7.80	.60	13.20

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 15

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHLOROPHYTA			
CLOSTERIUM SPP	.40	.60	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA		68.00	34.00
SYNEDRA AMPHICEPHALA	870.00	2346.00	2278.00
SYNEDRA MINUSCULA	374.00	918.00	612.00
SYNEDRA ULNA	88.00	170.00	34.00
ACHNANTHES LANCEOLATA	44.00	68.00	34.00
ACHNANTHES MINUTISSIMA	328.00	42398.00	15300.00
NAVICULA ARVENSIS	22.00		34.00
NAVICULA CRYPTOCEPHALA	110.00	238.00	34.00
NAVICULA SP 1	154.00	68.00	102.00
AMPHORA SP 1	22.00		
CYMBELLA AFFINIS	660.00	1802.00	646.00
CYMBELLA MICROCEPHALA	110.00	68.00	
CYMBELLA VENTRICOSA	22.00	102.00	68.00
GOMPHONEMA INTRICATUM		68.00	102.00
GOMPHONEMA PARVULUM	44.00	170.00	
NITZSCHIA DENTICULA	330.00	1020.00	442.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 15

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA			
NITZSCHIA DISSIPATA	22.00		
NITZSCHIA FRUSTULUM	198.00	136.00	170.00
NITZSCHIA PALEA	66.00	68.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 18

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SYNEDRA AMPHICEPHALA	714.00	312.00	595.00
SYNEDRA MINUSCULA		8.00	
ACHNANTHES LANCEOLATA	34.00	16.00	51.00
ACHNANTHES MINUTISSIMA	346.00	168.00	1020.00
NAVICULA ARVENSIS	272.00		
NAVICULA CRYPTOCEPHALA	714.00	128.00	85.00
NAVICULA PELLICULOSA	046.00	352.00	1343.00
NAVICULA SP 1	612.00	224.00	170.00
NAVICULA SP 2	68.00	56.00	34.00
PINNULARIA BREBISSONII	34.00	16.00	
AMPHORA SP 1			17.00
CYMBELLA AFFINIS	170.00		
CYMBELLA MICROCEPHALA			17.00
CYMBELLA VENTRICOSA			17.00
GOMPHONEMA INTRICATUM	170.00	32.00	51.00
NITZSCHIA ACICULARIS		168.00	697.00
NITZSCHIA CAPITELLATA	204.00	16.00	17.00
NITZSCHIA DENTICULA	170.00	88.00	68.00
NITZSCHIA FRUSTULUM	632.00	536.00	510.00
NITZSCHIA HOLSATICA	136.00		51.00

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 18

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA LINEARIS	9.00	.90	17.00
NITZSCHIA MICROCEPHALA	68.00	8.00	17.00
NITZSCHIA PALEA	190.00	184.00	204.00
SURIRELLA OVALIS	34.00		1.50

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 19

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP			48.00
CALOTHRIX SPP	11.00	11.00	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA		11.00	
FRAGILARIA VAUCHERIAE		11.00	
SYNEDRA AMPHICEPHALA	121.00	132.00	8.00
SYNEDRA DELICATISSIMA			8.00
SYNEDRA ULNA	33.00	11.00	
COCCONEIS PLACENTULA	11.00		
ACHNANTHES LANCEOLATA		11.00	8.00
ACHNANTHES MINUTISSIMA	352.00	66.00	48.00
RHOICOSPHENIA CURVATA	55.00	99.00	56.00
GYROSIGMA ACUMINATUM		.20	.28
PLEUROSIGMA DELICATULUM	.20	11.00	.42
NAVICULA ARVENSIS	44.00		
NAVICULA CRYPTOCEPHALA	121.00	77.00	24.00
NAVICULA GREGARIA	22.00		
NAVICULA PELLICULOSA	11.00	99.00	

PIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 19

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA	22.00	22.00	8.00
NAVICULA SP 1	22.00		
NAVICULA SP 2		11.00	
CYMBELLA SP 1		22.00	.21
EPITHEMIA ZEBRA			16.00
RHOPALODIA GIBBA			24.00
RHOPALODIA GIBBERULA	22.00		8.00
NITZSCHIA ACICULARIS	11.00	11.00	
NITZSCHIA APICULATA	44.00		
NITZSCHIA CAPITELLATA	617.00	979.00	888.00
NITZSCHIA FRUSTULUM	220.00	429.00	
NITZSCHIA HOLSATICA		11.00	
NITZSCHIA IGNORATA		242.00	
NITZSCHIA LINEARIS			8.00
NITZSCHIA MICROCEPHALA	143.00	33.00	
NITZSCHIA PALEA	22.00	99.00	
SURIRELLA OVATA		.10	
SURIRELLA OVALIS			

RIO BLANCO UIL APPENDIX E-11-2 (Continued)

SITE = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	1540.00		
CALOTHRIX SPP		644.00	28.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA		14.00	
DIATOMA VULGARE		14.00	
SYNEDRA AMPHICEPHALA			14.00
SYNEDRA MINUSCULA			7.00
SYNEDRA PULCHELLA	70.00	168.00	49.00
SYNEDRA ULNA			14.00
ACHNANTHES MINUTISSIMA	724.00	8470.00	5796.00
GYRUSIGMA ACUMINATUM			.18
NAVICULA CRYPTOCEPHALA		56.00	
NAVICULA GREGARIA		14.00	
NAVICULA PELLICULOSA		28.00	
NAVICULA SP 1		28.00	
NAVICULA SP 2		14.00	14.00
CALONEIS AMPHISBAENA		.12	
AMPHORA OVALIS VAR. PEDICULUS	14.00		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 20

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS		28.00	
CYMBELLA SP 1	14.00	28.00	21.00
NITZSCHIA FRUSTULUM	14.00	126.00	91.00
NITZSCHIA HULSATICA		42.00	182.00
NITZSCHIA MICROCEPHALA	14.00		7.00
NITZSCHIA PALEA	28.00		
SURIRELLA OVATA			14.00
SURIRELLA OVALIS	70.00		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 21

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
DIATOMA VULGARE		36.00	
SYNEDRA AMPHICEPHALA	56.00	27.00	34.00
SYNEDRA PULCHELLA	98.00	18.00	1.20
ACHNANTHES MINUTISSIMA	694.00	5337.00	30498.00
GYROSIGMA ACUMINATUM		9.00	.60
NAVICULA ARVENSIS			34.00
NAVICULA SP 1		18.00	68.00
NAVICULA SP 2	28.00		
CALONEIS AMPHISBAENA		.08	
CYMBELLA AFFINIS	28.00	9.00	
CYMBELLA SP 1		18.00	
NITZSCHIA APICULATA		9.00	
NITZSCHIA FRUSTULUM		414.00	34.00
NITZSCHIA HULSATICA	70.00	99.00	238.00
NITZSCHIA PALEA			68.00
SURIRELLA OVATA	14.00	18.00	34.00
SURIRELLA OVALIS	.12		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 22

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP			2.00
CHLOROPHYTA			
CLADOPHORA SPP			6.00
CHRYSOPHYTA			
THALASSIOSIRA FLUVIATILIS			2.00
CYCLOTELLA MENEGHINIANA		6.00	8.00
DIATOMA VULGARE	2.00	24.00	4.00
FRAGILARIA VAUCHERIAE		2.00	4.00
SYNEDRA AMPHICEPHALA	2.00	2.00	54.00
SYNEDRA PULCHELLA	11.00	10.00	66.00
ACHNANTHES LANCEOLATA	1.00	2.00	
ACHNANTHES MINUTISSIMA	20.00	32.00	22.00
GYROSIGMA ACUMINATUM			4.00
NAVICULA CRYPTOCEPHALA	2.00	20.00	10.00
NAVICULA SALINARUM VAR. INTERMEDIA	2.00		
NAVICULA SEMINULUM		2.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 22

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA VIRIDULA	2.00	4.00	
NAVICULA SP 2		2.00	2.00
AMPHORA OVALIS VAR. PEDICULUS	1.00		
CYMBELLA AFFINIS	2.00		2.00
CYMBELLA SINUATA	2.00		2.00
CYMBELLA SP 1		4.00	
GOMPHONEMA INTRICATUM	1.00	10.00	
GOMPHONEMA OLIVACEUM	1.00		2.00
GOMPHONEMA VENTRICOSUM			4.00
EPITHEMIA SOREX	4.00		4.00
NITZSCHIA APICULATA	1.00		
NITZSCHIA DISSIPATA	5.00	16.00	4.00
NITZSCHIA FRUSTULUM	7.00	88.00	14.00
NITZSCHIA GRACILIS		2.00	
NITZSCHIA HULSATICA	6.00	8.00	30.00
NITZSCHIA PALEA			10.00
NITZSCHIA VERMICULARIS			.08
SURIRELLA OVALIS			2.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 23

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	904.00	68.00	272.00
CALOTHRIX SPP	700.00	272.00	1088.00
CHRYSOPHYTA			
DIATOMA VULGARE	244.00	748.00	2584.00
FRAGILARIA PINNATA	68.00		
FRAGILARIA VAUCHERIAE		68.00	272.00
COCCONEIS PEDICULUS		68.00	
ACHNANTHES MINUTISSIMA	156.00	204.00	476.00
GYROSIGMA ACUMINATUM			.60
NAVICULA CRYPTOCEPHALA	516.00	2108.00	3944.00
NAVICULA MINIMA		68.00	136.00
NAVICULA PUPULA	68.00		
NAVICULA SALINARUM			1156.00
NAVICULA SALINARUM VAR. INTERMEDIA	272.00	476.00	
NAVICULA TRIPUNCTATA	408.00	272.00	476.00
NAVICULA VIRIDULA	448.00	2040.00	5032.00
NAVICULA SP 1			68.00
NAVICULA SP 2	68.00		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 23

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
AMPHORA OVALIS VAR. PEDICULUS	272.00	204.00	612.00
CYMBELLA AFFINIS	544.00	136.00	1496.00
CYMBELLA MEXICANA	68.00	1.80	3.60
CYMBELLA SINUATA	204.00	68.00	68.00
CYMBELLA VENTRICOSA	68.00	136.00	
GOMPHONEMA INTRICATUM	68.00	68.00	
GOMPHONEMA OLIVACEUM	632.00	612.00	952.00
GOMPHONEMA VENTRICOSUM	632.00	408.00	816.00
EPITHEMIA SOREX	472.00	5032.00	8024.00
RHOPALODIA GIBBA	68.00	4.80	2.40
NITZSCHIA CHASEI	340.00	204.00	408.00
NITZSCHIA DISSIPATA	412.00	4012.00	9996.00
NITZSCHIA FRUSTULUM	564.00	1020.00	1768.00
NITZSCHIA HOLSATICA	748.00	136.00	340.00
NITZSCHIA PALEA	68.00		136.00
CYMATOPLEURA SOLEA		.60	
SURIRELLA OVATA	204.00		68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 24

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	102.00	680.00	816.00
CALOTHRIX SPP	224.00	884.00	476.00
CHLOROPHYTA			
CLADOPHORA SPP		272.00	
CHRYSOPHYTA			
DIATOMA VULGARE	850.00	8568.00	4284.00
FRAGILARIA PINNATA		68.00	
FRAGILARIA VAUCHERIAE	34.00	272.00	68.00
SYNEDRA ULNA	34.00	204.00	204.00
COCCONEIS PEDICULUS		340.00	68.00
ACHNANTHES MINUTISSIMA	272.00	476.00	340.00
GYROSIGMA ACUMINATUM	1.20		
NAVICULA CRYPTOCEPHALA	680.00	3264.00	1768.00
NAVICULA SALINARUM VAR. INTERMEDIA	68.00	1428.00	544.00
NAVICULA TRIPUNCTATA	102.00	748.00	272.00
NAVICULA VAUCHERIAE			68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 24

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA VIRIDULA	170.00	9724.00	1428.00
CALONEIS AMPHISBAENA		.60	
CALONEIS BACILLUM		68.00	
AMPHORA OVALIS VAR. PEDICULUS	168.00	3264.00	680.00
CYMBELLA AFFINIS	34.00	476.00	748.00
CYMBELLA MEXICANA		1.80	
CYMBELLA PRUSTRATA		68.00	68.00
CYMBELLA SINUATA	68.00	204.00	
CYMBELLA VENTRICOSA		136.00	
GOMPHONEMA INTRICATUM	68.00		
GOMPHONEMA OLIVACEUM	102.00	1700.00	340.00
GOMPHONEMA VENTRICOSUM	136.00	204.00	1020.00
EPITHEMIA SOREX	258.00	6392.00	9316.00
RHOPALODIA GIBBA		3.00	1.80
NITZSCHIA CHASEI	68.00	612.00	272.00
NITZSCHIA DISSIPATA	646.00	3400.00	3332.00
NITZSCHIA FRUSTULUM	476.00	272.00	952.00
NITZSCHIA HOLSATICA			68.00
NITZSCHIA SIGMOIDEA		1.20	
SURIRELLA OVATA	34.00		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 25

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	68.00	136.00	136.00
CALOTHRIX SPP	818.00	2244.00	544.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			68.00
STEPHANODISCUS SPP		204.00	
DIATOMA VULGARE	276.00	2516.00	4760.00
FRAGILARIA VAUCHERIAE		68.00	68.00
SYNEDRA ULNA		68.00	204.00
ACHNANTHES LANCEOLATA	68.00		
ACHNANTHES MINUTISSIMA	204.00	272.00	68.00
GYROSIGMA ACUMINATUM			1.20
NAVICULA CRYPTOCEPHALA	088.00	1360.00	3944.00
NAVICULA SALINARUM VAR. INTERMEDIA	020.00	272.00	1836.00
NAVICULA TRIPUNCTATA	136.00	340.00	
NAVICULA VIRIDULA	612.00	748.00	3604.00
NAVICULA SP 2	68.00		
CALONEIS AMPHISBAENA	2.40	1.80	68.00
AMPHORA OVALIS VAR. PEDICULUS	408.00	340.00	340.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 25

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMBELLA AFFINIS	680.00	612.00	408.00
CYMBELLA MEXICANA	1.20	.60	
CYMBELLA VENTRICOSA		136.00	136.00
GOMPHONEMA INTRICATUM		68.00	204.00
GOMPHONEMA OLIVACEUM	476.00	136.00	612.00
GOMPHONEMA VENTRICOSUM	156.00	1292.00	1292.00
EPITHEMIA SOREX	176.00	10744.00	9792.00
RHOPALODIA GIBBA	68.00	204.00	4.80
NITZSCHIA CHASEI	340.00	952.00	340.00
NITZSCHIA DISSIPATA	604.00	5032.00	6800.00
NITZSCHIA FRUSTULUM	408.00	1292.00	1156.00
NITZSCHIA HOLSATICA	204.00	136.00	272.00
NITZSCHIA PALEA	68.00	68.00	
SURIRELLA OVATA		68.00	408.00
SURIRELLA OVALIS		68.00	

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RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	68.00	1.00	272.00
CALOTHRIX SPP	408.00	68.00	680.00
CHRYSOPHYTA			
DIATOMA VULGARE	088.00	4352.00	7548.00
FRAGILARIA LEPTOSTAURON	68.00		
FRAGILARIA VAUCHERIAE		68.00	68.00
SYNEDRA AMPHICEPHALA		136.00	
SYNEDRA PULCHELLA			68.00
SYNEDRA ULNA	136.00	272.00	340.00
ACHNANTHES MINUTISSIMA	68.00	68.00	476.00
AMPHIPLEURA PELLUCIDA	68.00	68.00	
GYROSIGMA ACUMINATUM	136.00	1.20	
NAVICULA CRYPTOCEPHALA	496.00	1564.00	3808.00
NAVICULA SALINARUM VAR. INTERMEDIA	680.00	884.00	1156.00
NAVICULA SEMINULUM	136.00		68.00
NAVICULA SUBHAMULATA	68.00		
NAVICULA TRIPUNCTATA	272.00	408.00	272.00
NAVICULA VIRIDULA	904.00	1904.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS AMPHISBAENA	1.80		
CALONEIS BACILLUM			68.00
AMPHORA OVALIS VAR. PEDICULUS	020.00	408.00	1020.00
CYMBELLA AFFINIS	612.00	1088.00	544.00
CYMBELLA MEXICANA	1.80		1.20
CYMBELLA SINUATA	68.00		
CYMBELLA VENTRICOSA	68.00	136.00	340.00
GOMPHONEMA INTRICATUM	680.00	68.00	2516.00
GOMPHONEMA OLIVACEUM	136.00	272.00	816.00
GOMPHONEMA VENTRICOSUM	680.00	1020.00	1836.00
EPITHEMIA SOREX	536.00	1088.00	6256.00
EPITHEMIA ZEBRA			1.80
RHOPALODIA GIBBA	68.00	.60	72.80
CYLINDROTHECA GRACILIS	68.00		
NITZSCHIA APICULATA	68.00		
NITZSCHIA CHASEI	340.00	408.00	408.00
NITZSCHIA DISSIPATA	828.00	3808.00	4760.00
NITZSCHIA FRUSTULUM	816.00	1972.00	1564.00
NITZSCHIA HULSATICA	136.00	408.00	272.00
NITZSCHIA SIGMOIDEA	1.80		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 26

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMATOPLEURA SOLEA	1.80		.60
SURIRELLA OVATA	68.00		68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	952.00	816.00	136.00
ANABAENA SPP			68.00
CALOTHRIX SPP	476.00	340.00	
CHRYSOPHYTA			
DIATOMA VULGARE	840.00	8908.00	9384.00
FRAGILARIA CONSTRUENS		68.00	
FRAGILARIA VAUCHERIAE	476.00	476.00	136.00
SYNEDRA ULNA	340.00	136.00	136.00
COCCONEIS PEDICULUS	136.00		
ACHNANTHES MINUTISSIMA	68.00	204.00	408.00
RHOICOSPHENIA CURVATA		68.00	
AMPHIPLEURA PELLUCIDA	204.00		
GYROSIGMA ACUMINATUM	1.80	1.20	1.20
NAVICULA CRYPTOCEPHALA	284.00	1904.00	2516.00
NAVICULA MINIMA	272.00		
NAVICULA SALINARUM VAR. INTERMEDIA	360.00	476.00	816.00
NAVICULA TRIPUNCTATA	156.00	816.00	476.00
NAVICULA VIRIDULA	808.00	2244.00	2312.00

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS AMPHISBAENA		.60	.60
CALONEIS BACILLUM	136.00		
AMPHORA OVALIS VAR. PEDICULUS	632.00	1224.00	952.00
CYMBELLA AFFINIS	952.00	680.00	544.00
CYMBELLA MEXICANA	.60	1.20	.60
CYMBELLA SINUATA	68.00	204.00	204.00
CYMBELLA VENTRICOSA	136.00	272.00	
GOMPHONEMA INTRICATUM	68.00		68.00
GOMPHONEMA OLIVACEUM	088.00	1088.00	748.00
GOMPHONEMA VENTRICOSUM	360.00	272.00	544.00
EPITHEMIA SOREX	556.00	7208.00	2312.00
RHOPALODIA GIBBA	1.80	68.00	
NITZSCHIA APICULATA			68.00
NITZSCHIA CHASEI	612.00		340.00
NITZSCHIA DISSIPATA	976.00	6800.00	5030.00
NITZSCHIA FRUSTULUM	632.00	1360.00	952.00
NITZSCHIA GRACILIS			136.00
NITZSCHIA HOLSATICA	272.00	272.00	68.00
NITZSCHIA PALEA	68.00		
NITZSCHIA VERMICULARIS	68.00		

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 27

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVATA	68.00	136.00	68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	788.00	476.00	476.00
CHRYSUPHYTA			
DIATOMA VULGARE	816.00	1020.00	1700.00
FRAGILARIA PINNATA			68.00
FRAGILARIA VAUCHERIAE	68.00		
SYNEDRA ULNA		136.00	340.00
COCCONEIS PEDICULUS		68.00	68.00
ACHNANTHES MINUTISSIMA	136.00	748.00	748.00
AMPHIPLEURA PELLUCIDA		68.00	68.00
GYRUSIGMA ACUMINATUM	.60	.60	
NAVICULA CRYPTOCEPHALA	972.00	680.00	2720.00
NAVICULA MINIMA	204.00	136.00	
NAVICULA PUPULA	68.00		
NAVICULA SALINARUM VAR. INTERMEDIA	496.00	680.00	1936.00
NAVICULA SUBHAMULATA			68.00
NAVICULA TRIPUNCTATA	476.00		680.00
NAVICULA VIRIDULA	836.00		2584.00
CALONEIS AMPHISBAENA	1.80	.60	1.80

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RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS BACILLUM		68.00	
AMPHORA OVALIS VAR. PEDICULUS	312.00	1564.00	1020.00
CYMBELLA AFFINIS	612.00	68.00	1020.00
CYMBELLA MEXICANA		.60	.60
CYMBELLA SINUATA	088.00	136.00	
CYMBELLA VENTRICOSA	68.00		
GOMPHONEMA INTRICATUM		204.00	68.00
GOMPHONEMA OLIVACEUM	272.00	476.00	476.00
GOMPHONEMA VENTRICOSUM	088.00	272.00	1428.00
EPITHEMIA SOREX	304.00	3332.00	4012.00
RHOPALODIA GIBBA	136.00	68.00	
HANTZSCHIA AMPHIOXYS			68.00
NITZSCHIA AMPHIBIA	68.00	68.00	
NITZSCHIA APICULATA		68.00	
NITZSCHIA CHASEI	020.00	204.00	544.00
NITZSCHIA DISSIPATA	880.00	4148.00	7752.00
NITZSCHIA FRUSTULUM	816.00	952.00	2040.00
NITZSCHIA GRACILIS	136.00		204.00
NITZSCHIA HULSATICA	272.00	204.00	408.00
CYMATOPLEURA SOLEA			.60

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 28

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVATA	68.00		340.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	68.00	748.00	544.00
CALUTHRIX SPP	136.00	612.00	544.00
CHRYSOPHYTA			
STEPHANODISCUS TENUIS	68.00		
DIATOMA VULGARE	544.00	2448.00	1564.00
FRAGILARIA PINNATA		68.00	
FRAGILARIA VAUCHERIAE		272.00	
SYNEDRA AMPHICEPHALA			68.00
SYNEDRA PULCHELLA			68.00
SYNEDRA ULNA		136.00	68.00
COCCONEIS PEDICULUS	136.00		
COCCONEIS PLACENTULA			68.00
ACHNANTHES MINUTISSIMA	68.00	272.00	340.00
AMPHIPLEURA PELLUCIDA	68.00		
GYROSIGMA ACUMINATUM	1.20	136.00	
NAVICULA CRYPTOCEPHALA		1904.00	2312.00
NAVICULA SALINARUM VAR. INTERMEDIA	040.00	816.00	748.00
NAVICULA SEMINULUM		340.00	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA SUBHAMULATA			204.00
NAVICULA TRIPUNCTATA	136.00		136.00
NAVICULA VIRIDULA	292.00	1292.00	1904.00
CALONEIS AMPHISBAENA	1.20	68.00	
AMPHORA OVALIS VAR. PEDICULUS	68.00	3128.00	4624.00
CYMBELLA AFFINIS	204.00	408.00	544.00
CYMBELLA SINUATA	68.00	136.00	476.00
CYMBELLA VENTRICOSA		68.00	
GOMPHONEMA INTRICATUM	136.00	204.00	136.00
GOMPHONEMA OLIVACEUM	68.00	476.00	748.00
GOMPHONEMA VENTRICOSUM	340.00	748.00	680.00
EPITHEMIA SOREX	292.00	5372.00	5440.00
RHOPALODIA GIBBA	68.00	.60	5.40
NITZSCHIA ACICULARIS		204.00	
NITZSCHIA APICULATA	136.00	68.00	
NITZSCHIA CHASEI	68.00	544.00	612.00
NITZSCHIA DISSIPATA	080.00	5236.00	6528.00
NITZSCHIA FRUSTULUM	312.00	3400.00	884.00
NITZSCHIA GRACILIS	204.00		68.00
NITZSCHIA HOLSATICA	496.00	272.00	544.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 29

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA PALEA	136.00		204.00
CYMATOPLEURA SOLEA	1.20	1.80	
SURIRELLA OVATA	544.00	68.00	340.00
SURIRELLA OVALIS	136.00		.60

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	884.00	204.00	136.00
CALOTHRIX SPP	612.00	544.00	1020.00
CHRYSOPHYTA			
DIATOMA VULGARE	196.00	4012.00	1904.00
FRAGILARIA LEPTOSTAURON		204.00	68.00
FRAGILARIA PINNATA			340.00
FRAGILARIA VAUCHERIAE		136.00	136.00
SYNEDRA ULNA	136.00	544.00	
COCCONEIS PEDICULUS			68.00
ACHNANTHES MINUTISSIMA	204.00	340.00	408.00
AMPHIPLEURA PELLUCIDA			68.00
GYROSIGMA ACUMINATUM	.60	9.60	
NAVICULA CRYPTOCEPHALA	196.00	2924.00	3536.00
NAVICULA MINIMA		136.00	68.00
NAVICULA SALINARUM VAR. INTERMEDIA	884.00	1836.00	884.00
NAVICULA SUBHAMULATA		136.00	136.00
NAVICULA TRIPUNCTATA	816.00	272.00	476.00
NAVICULA VIRIDULA	652.00	1360.00	1700.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS AMPHISBAENA		136.00	
CALONEIS BACILLUM	136.00	68.00	
AMPHORA OVALIS VAR. PEDICULUS	156.00	1632.00	3808.00
CYMBELLA AFFINIS	748.00	884.00	884.00
CYMBELLA MEXICANA	.60	3.00	1.20
CYMBELLA SINUATA	748.00		
CYMBELLA VENTRICOSA		136.00	136.00
GOMPHONEMA OLIVACEUM	340.00	748.00	340.00
GOMPHONEMA VENTRICOSUM	204.00	1156.00	884.00
EPITHEMIA SOREX	944.00	1972.00	10064.00
RHOPALODIA GIBBA	68.00	.60	68.00
NITZSCHIA CAPITELLATA			68.00
NITZSCHIA CHASEI	340.00	136.00	544.00
NITZSCHIA DISSIPATA	712.00	3740.00	6868.00
NITZSCHIA FRUSTULUM	088.00	1156.00	1496.00
NITZSCHIA GRACILIS	68.00	136.00	
NITZSCHIA HOLSATICA	136.00	68.00	612.00
NITZSCHIA PALEA		68.00	136.00
NITZSCHIA SIGMOIDEA		1.80	
CYMATOPLEURA SOLEA		5.40	

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 30

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVATA	68.00	408.00	136.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
CALOTHRIX SPP	340.00	204.00	340.00
CHLOROPHYTA			
CLADOPHORA SPP		340.00	
CHRYSOPHYTA			
DIATOMA VULGARE	916.00	4012.00	4624.00
FRAGILARIA PINNATA	68.00	68.00	
FRAGILARIA VAUCHERIAE	68.00	544.00	340.00
SYNEDRA AMPHICEPHALA	68.00	68.00	
SYNEDRA PULCHELLA	68.00		
SYNEDRA ULNA	204.00	136.00	136.00
COCCONEIS PEDICULUS	272.00		
ACHNANTHES MINUTISSIMA	204.00	544.00	476.00
NAVICULA CRYPTOCEPHALA	768.00	1972.00	3400.00
NAVICULA PELLICULOSA		68.00	68.00
NAVICULA SALINARUM VAR. INTERMEDIA	088.00	1292.00	476.00
NAVICULA SUBHAMULATA			136.00

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA TRIPUNCTATA	340.00	68.00	612.00
NAVICULA VIRIDULA	244.00	2448.00	2516.00
CALONEIS BACILLUM		68.00	136.00
AMPHORA OVALIS VAR. PEDICULUS	204.00	204.00	68.00
CYMBELLA AFFINIS	408.00	1564.00	884.00
CYMBELLA MEXICANA	68.00	.60	
CYMBELLA VENTRICOSA			68.00
GOMPHONEMA INTRICATUM	272.00	272.00	
GOMPHONEMA OLIVACEUM	612.00	1700.00	1156.00
GOMPHONEMA VENTRICOSUM	612.00	2040.00	680.00
EPITHEMIA SOREX	432.00	15232.00	13396.00
EPITHEMIA ZEBRA	68.00		
RHOPALODIA GIBBA	69.20	1.80	1.80
NITZSCHIA CAPITELLATA		68.00	
NITZSCHIA CHASEI	136.00	748.00	1360.00
NITZSCHIA DISSIPATA	336.00	11016.00	15708.00
NITZSCHIA FRUSTULUM	244.08	2584.00	2720.00
NITZSCHIA GRACILIS			68.00
NITZSCHIA HULSATICA	136.00	408.00	340.00
NITZSCHIA MICROCEPHALA			68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 31

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA PALEA		68.00	68.00
SURIRELLA OVATA	204.00	136.00	680.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP		136.00	68.00
CALOTHRIX SPP	272.00	68.00	204.00
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			68.00
DIATOMA VULGARE	652.00	7480.00	4624.00
FRAGILARIA CAPUCINA		816.00	
FRAGILARIA LEPTOSTAURON			68.00
FRAGILARIA VAUCHERIAE		340.00	
SYNEDRA PULCHELLA	68.00	68.00	
SYNEDRA ULNA	272.00	408.00	136.00
COCCONEIS PEDICULUS	68.00	68.00	68.00
ACHNANTHES MINUTISSIMA	68.00		68.00
AMPHIPLEURA PELLUCIDA		68.00	
GYROSIGMA ACUMINATUM	1.20	1.20	.60
NAVICULA CRYPTOCEPHALA	156.00	2108.00	1972.00
NAVICULA SALINARUM VAR. INTERMEDIA	680.00	680.00	1360.00
NAVICULA TRIPUNCTATA		680.00	204.00
NAVICULA VIRIDULA	748.00	2448.00	1360.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA SP 2	68.00		
CALONEIS AMPHISBAENA	2.40	.60	
CALONEIS BACILLUM			68.00
AMPHORA OVALIS VAR. PEDICULUS	204.00	272.00	136.00
CYMBELLA AFFINIS	204.00	340.00	816.00
CYMBELLA MEXICANA		.60	
CYMBELLA VENTRICOSA	136.00	68.00	
CYMBELLA SP 1			68.00
GOMPHONEMA INTRICATUM		272.00	
GOMPHONEMA OLIVACEUM	612.00	408.00	1904.00
GOMPHONEMA VENTRICOSUM	952.00	204.00	816.00
EPITHEMIA SOREX	224.00	6052.00	2652.00
RHOPALODIA GIBBA		136.00	
NITZSCHIA ACICULARIS	68.00		
NITZSCHIA APICULATA	136.00		68.00
NITZSCHIA CHASEI	340.00	136.00	272.00
NITZSCHIA DISSIPATA	248.00	5168.00	6324.00
NITZSCHIA FRUSTULUM	748.00	136.00	884.00
NITZSCHIA GRACILIS		68.00	
NITZSCHIA HULSATICA		204.00	680.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 32

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA			
NITZSCHIA IGNORATA	68.00		
NITZSCHIA PALEA	204.00	136.00	68.00
NITZSCHIA SIGMOIDEA	.60	.60	
CYMATOPLEURA SOLEA	.60	.60	.60
SURIRELLA OVATA	340.00	476.00	204.00
SURIRELLA OVALIS	.60		

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 33

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	204.00		612.00
CALOTHRIX SPP	652.00	2108.00	68.00
CHLOROPHYTA			
CLADOPHORA SPP	.60		
COSMARIUM RADIOSUM			68.00
CHRYSOPHYTA			
DIATOMA VULGARE	292.00	30668.00	2312.00
FRAGILARIA CONSTRUENS			340.00
FRAGILARIA PINNATA		68.00	
FRAGILARIA VAUCHERIAE	136.00	272.00	
SYNEDRA ULNA	8.40	476.00	204.00
COCCONEIS PEDICULUS	68.00		204.00
COCCONEIS PLACENTULA		204.00	68.00
ACHNANTHES MINUTISSIMA	816.00	272.00	340.00
AMPHIPLEURA PELLUCIDA		136.00	68.00
GYROSIGMA ACUMINATUM		1.20	

RIO BLANCO OIL — APPENDIX E-11-2 (Continued)

SITE = 33

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSUPHYTA			
NAVICULA CRYPTOCEPHALA	264.00	3672.00	1292.00
NAVICULA MINIMA			68.00
NAVICULA SALINARUM VAR. INTERMEDIA	680.00	1360.00	1020.00
NAVICULA SEMINULUM	136.00		
NAVICULA TRIPUNCTATA	204.00	272.00	68.00
NAVICULA VIRIDULA	360.00	2448.00	748.00
NAVICULA SP 1	68.00		
CALONEIS AMPHISBAENA		.60	
CALONEIS BACILLUM		68.00	136.00
AMPHORA OVALIS VAR. PEDICULUS	680.00	680.00	1360.00
CYMBELLA AFFINIS	544.00	1224.00	204.00
CYMBELLA MEXICANA		1.80	
CYMBELLA SINUATA	136.00		68.00
CYMBELLA VENTRICOSA	136.00	68.00	
GOMPHONEMA INTRICATUM	408.00	136.00	
GOMPHONEMA OLIVACEUM	544.00	1360.00	340.00
GOMPHONEMA VENTRICOSUM	340.00	1156.00	272.00
EPITHEMIA SOREX	372.00	8364.00	1972.00
RHOPALODIA GIBBA		68.00	
NITZSCHIA ACICULARIS			136.00

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 33

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NITZSCHIA CAPITELLATA			68.00
NITZSCHIA CHASEI		204.00	
NITZSCHIA DISSIPATA	108.00	8024.00	5304.00
NITZSCHIA FRUSTULUM	476.00	1632.00	1632.00
NITZSCHIA GRACILIS	68.00		272.00
NITZSCHIA HOLSATICA	68.00	476.00	340.00
NITZSCHIA PALEA	136.00		136.00
CYMATOPLEURA SOLEA		.60	
SURIRELLA OVATA		476.00	68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 34

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	204.00	136.00	
CHRYSOPHYTA			
CYCLOTELLA MENEGHINIANA			136.00
DIATOMA VULGARE	612.00	748.00	1836.00
FRAGILARIA PINNATA	272.00	68.00	
FRAGILARIA VAUCHERIAE	408.00		272.00
SYNEDRA ULNA		68.00	136.00
COCCONEIS PEDICULUS		68.00	
COCCONEIS PLACENTULA	68.00		136.00
ACHNANTHES MINUTISSIMA	68.00	136.00	
AMPHIPLEURA PELLUCIDA	68.00		68.00
NAVICULA CAPITATA	68.00		
NAVICULA CRYPTOCEPHALA	496.00	1768.00	1292.00
NAVICULA MINIMA	68.00		
NAVICULA SALINARUM VAR. INTERMEDIA	544.00	340.00	816.00
NAVICULA TRIPUNCTATA	68.00	68.00	68.00
NAVICULA VAUCHERIAE	68.00		68.00
NAVICULA VIRIDULA	408.00	204.00	1564.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 34

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
NAVICULA SP 1		68.00	
CALONEIS AMPHISBAENA	.60		
AMPHORA OVALIS VAR. PEDICULUS	544.00	204.00	272.00
CYMBELLA AFFINIS	224.00	816.00	2108.00
CYMBELLA SINUATA			68.00
CYMBELLA VENTRICOSA		136.00	204.00
GOMPHONEMA INTRICATUM	68.00		340.00
GOMPHONEMA OLIVACEUM	020.00	340.00	2652.00
GOMPHONEMA TRUNCATUM	68.00		
GOMPHONEMA VENTRICOSUM	272.00		1156.00
EPITHEMIA SOREX	324.00	18088.00	1836.00
RHOPALODIA GIBBA		136.00	.60
NITZSCHIA CAPITELLATA			68.00
NITZSCHIA CHASEI	204.00	68.00	340.00
NITZSCHIA DISSIPATA	112.00	4352.00	3740.00
NITZSCHIA FRUSTULUM	284.00	2584.00	3944.00
NITZSCHIA GRACILIS	68.00	68.00	204.00
NITZSCHIA HOLSATICA	952.00	1020.00	1768.00
NITZSCHIA PALEA		136.00	68.00
NITZSCHIA SIGMOIDEA			.60

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 34

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
SURIRELLA OVATA	136.00	68.00	68.00

RIO BLANCO OIL APPENDIX E-11-2 (Continued)

SITE = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CYANOPHYTA			
LYNGBYA SPP	204.00	408.00	680.00
CALOTHRIX SPP	340.00	3196.00	680.00
CHRYSOPHYTA			
DIATOMA VULGARE	896.00	3808.00	4216.00
FRAGILARIA PINNATA	136.00		
FRAGILARIA VAUCHERIAE	136.00	68.00	
SYNEDRA ULNA	68.00		
COCCONEIS PLACENTULA			136.00
ACHNANTHES MINUTISSIMA	476.00	204.00	340.00
GYROSIGMA ACUMINATUM	2.40		1.20
NAVICULA CRYPTOCEPHALA	788.00	1700.00	1904.00
NAVICULA MINIMA		72.00	
NAVICULA SALINARUM VAR. INTERMEDIA	496.00	136.00	680.00
NAVICULA SEMINULUM	476.00		
NAVICULA SUBHAMULATA	204.00		
NAVICULA TRIPUNCTATA	088.00		544.00
NAVICULA VIRIDULA	768.00	544.00	1768.00
CALONEIS AMPHISBAENA	.60		.60

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CALONEIS BACILLUM			68.00
CALONEIS VENTRICOSA	136.00		
AMPHORA OVALIS VAR. PEDICULUS	304.00		1700.00
CYMBELLA AFFINIS	408.00	408.00	272.00
CYMBELLA MEXICANA	.60		
CYMBELLA SINUATA			204.00
CYMBELLA VENTRICOSA	68.00		
CYMBELLA SP 1		68.00	
GOMPHONEMA INTRICATUM	68.00	204.00	68.00
GOMPHONEMA OLIVACEUM	680.00	136.00	952.00
GOMPHONEMA VENTRICOSUM	156.00	136.00	204.00
EPITHEMIA SOREX	488.00	3808.00	5372.00
RHOPALODIA GIBBA	3.60	.60	69.80
NITZSCHIA APICULATA	136.00		
NITZSCHIA CHASEI	272.00	272.00	272.00
NITZSCHIA DISSIPATA	460.00	2516.00	4760.00
NITZSCHIA FRUSTULUM	224.00	476.00	1020.00
NITZSCHIA HOLSATICA	136.00	68.00	136.00
NITZSCHIA LINEARIS			.60
NITZSCHIA SIGMOIDEA			.60

RIO BLANCO OIL

APPENDIX E-11-2 (Continued)

SITE = 35

TAXON	REP A	REP B	REP C
	(CELLS/SQUARE MM)		
CHRYSOPHYTA			
CYMATOPLEURA SOLEA		.60	.60

RBOSP PROGRESS REPORT

APPENDIX E-11-3

DRY AND ORGANIC WEIGHT OF PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-11-3

DRY AND ORGANIC WEIGHT OF PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975[1]

Station Replicate	Dry Weight (g/50cm^2)	Organic Weight (g/50cm^2)
1-A	0.0851	0.0261
1-B	0.0680	0.0219
1-C	0.1331	0.0337
2-A	0.1257	0.0188
2-B	0.2139	0.0307
2-C	0.1680	0.0222
3-A	0.7179	0.0657
3-B	0.2517	0.0318
3-C	0.3180	0.0411
4-A	0.5207	0.1007
4-B	0.5389	0.1104
4-C	1.3226	0.1708
5-A	0.2841	0.0250
5-B	0.3132	0.0504
5-C	0.5092	0.0791
7-A	1.4289	0.1010
7-B	0.3551	0.0286
7-C	1.0990	0.0582
8-A	0.9712	0.1789
8-B	0.3273	0.0959
8-C	0.7911	0.1584
9-A	0.7548	0.0640
9-B	0.3054	0.0188
9-C	0.2028	0.0219
13-A	1.4385	0.2662
13-B	2.4741	0.2696
13-C	1.7567	0.3230
14-A	0.2956	0.0294
14-B	0.1787	0.0253
14-C	0.6830	0.0445
15-A	0.6696	0.0665
15-B	1.1360	0.0612
15-C	17.7390	1.0134
18-A	0.3612	0.0325
18-B	0.2797	0.0265
18-C	1.0413	0.0701
19-A	6.3571	1.2299
19-B	2.2141	0.4906
19-C	3.2744	0.7176
20-A	0.9735	0.1736
20-B	0.4426	0.0774
20-C	0.6489	0.0964

[1]Stations 6, 10 - 12 and 16 were dry at the time of sampling. Insufficient rocks at 17 to sample.

APPENDIX E-11-3 (Continued)

Station Replicate	Dry Weight ($g/50cm^2$)	Organic Weight ($g/50cm^2$)
21-A	0.1282	0.0179
21-B	0.1773	0.0217
21-C	0.2505	0.0259
22-A	0.2066	0.0291
22-B	0.0963	0.0108
22-C	0.1431	0.0157
23-A	3.8835	0.4392
23-B	4.7213	0.4175
23-C	3.2296	0.4588
24-A	2.9999	0.3040
24-B	7.7439	0.6754
24-C	3.4690	0.3442
25-A	4.8735	0.5875
25-B	4.2952	0.4126
25-C	3.7687	0.4772
26-A	9.4142	0.7099
26-B	13.6039	1.1453
26-C	6.8555	0.4817
27-A	6.5314	0.7353
27-B	4.0282	0.4091
27-C	5.6705	0.6637
28-A	6.3753	0.3340
28-B	2.9798	0.2394
28-C	5.0423	0.1646
29-A	6.3819	0.8350
29-B	5.1462	0.2766
29-C	3.5586	0.3154
30-A	4.6166	0.4019
30-B	4.3539	0.4363
30-C	9.3172	0.7581
31-A	3.8110	0.3897
31-B	4.7266	0.6865
31-C	2.4445	0.3155
32-A	5.1446	0.4552
32-B	5.3242	0.4373
32-C	10.1149	0.6645
33-A	4.9543	0.5611
33-B	5.2092	0.3413
33-C	2.5392	0.3654
34-A	4.8540	0.6021
34-B	1.6130	0.1578
34-C	2.3539	0.1838
35-A	1.7490	0.1997
35-B	7.4481	0.6295
35-C	11.9563	0.9547

2.4.5 Benthos

2.4.5.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.5.1 of Progress Report 3 for specific objectives.

2.4.5.2 Methods

The methods reported in section 2.4.5.2 of Progress Reports 2 and 3 remain unchanged with the exception that the D-frame net was utilized at Station 25 during both the October and November - December 1975 samplings of the White River. See section 2.4.5.2 of Progress Reports 2 and 3 for specific methods used in benthos sampling and analysis.

2.4.5.3 Results

Appendix E-12-1 lists the 111 benthic taxa observed during the October 1975 sampling, whereas Appendix E-13-1 presents a partial listing of taxa found during the November - December 1975 sampling period (laboratory analyses of Chironomidae and Oligochaeta from that period are presently being completed). Quantitative benthos data for the October 1975 sampling period are presented in Appendix E-12-2 and quantitative data from the November - December sampling (excluding Chironomidae and Oligochaeta) are presented in Appendix E-13-2.

During the October sampling, the most abundant taxa at Headwater Stations 1 - 4 included Oligochaeta, Baetidae, Plecoptera, Chironomidae, and Simuliidae. At Station 5 the most abundant benthic taxa were Oligochaeta, Hyalella azteca, Ceratopogonidae, Chironomidae, and Simuliidae. The most abundant taxa at the tract stations included Baetidae, Plecoptera, Chironomidae, and Simuliidae, whereas in Yellow Creek, the most abundant organisms were Oligochaeta, Ceratopogonidae, Chironomidae, and Simuliidae. In the White River, the dominant taxa were Oligochaeta, Chironomidae, Ephemerella sp., Hydropsyche sp., and Rhithrogena sp.

During the November - December 1975 sampling period, the most abundant benthic taxa at the headwater stations included Chironomidae, Plecoptera, Baetidae, and Nemoura sp. (at Station 1). At the tract stations, the most abundant taxa were Oligochaeta, Chironomidae, Baetidae, and Plecoptera (at Station 8). In Yellow Creek, the dominant taxa at Stations 20 - 22 included Oligochaeta, Chironomidae, and Simuliidae, whereas the most abundant organisms at Station 19 were Acari, Trichoptera, and Hyalella azteca. In the White River, Baetidae, Chironomidae, and Ephemerella sp. were the most abundant taxa during November - December 1975.

2.4.5 - Benthos Data

RBOSP PROGRESS REPORT

APPENDIX E-12-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-12-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

PLATYHELMINTHES
- Turbellaria
  - Tricladida

NEMATODA

MOLLUSCA
- Gastropoda
  - Basommatophora
    - Lymnaeidae
      - *Lymnaea* sp.
    - Physidae
      - *Physa* sp.
    - Planorbidae

ANNELIDA
- Hirundinea
  - Rhynchobdellida
    - Glossiphoniidae
      - *Helobdella stagnalis*
- Oligochaeta
  - Haplotaxida
    - Enchytraeidae
    - Tubificidae
      - *Limnodrilus claparedianus*
      - *Limnodrilus hoffmeisteri typical*
      - *Limnodrilus udekemianus*
      - *Rhyacodrilinae* sp.
      - Immatures with capilliform chaetae
      - Immatures without capilliform chaetae
    - Naididae
      - *Nais* sp.
      - *Nais behningi*
      - *Pristina* sp.

ARTHROPODA
- Arachnoidea
  - Acari
- Crustacea
  - Amphipoda
    - Talitridae
      - *Hyalella azteca*

Insecta
- Collembola
- Ephemeroptera
  - Baetidae
    - *Baetis* sp.
    - *Callibaetis* sp.
    - *Dactylobaetis* sp.
  - Heptageniidae
    - *Epeorus* sp.
    - *Heptagenia* sp
    - *Rhithrogena* sp.
  - Leptophlebiidae
    - *Choroterpes* sp.
    - *Traverella albertana*
  - Ephemerellidae
    - *Ephemerella* sp.
  - Caenidae
    - *Caenis* sp.
  - Tricorythidae
    - *Tricorythodes* sp.
- Odonata
  - Zygoptera
    - Coenagrionidae
      - *Argia* sp.
  - Anisoptera
    - Gomphidae
      - *Ophiogomphus severus*
- Plecoptera
  - Systellognatha
    - Perlodidae
      - *Isogenoides* sp.
      - *Isogenus* sp.
      - *Isoperla* sp.
- Hemiptera
  - Corixidae
- Coleoptera
  - Dytiscidae
    - *Deronectes* sp.
    - *Laccophilus* sp.
  - Hydraenidae
    - *Ochthebius* sp.
  - Hydrophilidae
    - *Cymbiodyta* sp.
  - Elmidae
    - *Dubiraphia* sp.
    - *Dubiraphia giulianii*
    - *Microcylloepus* sp.

- *Optioservus* sp.
- *Zaitzevia* sp.

Trichoptera

- Glossosomatidae
- Hydropsychidae
  - *Cheumatopsyche* sp.
  - *Hydropsyche* sp.
- Hydroptilidae
  - *Mayatrichia* sp.
- Limnephilidae
  - *Hesperophylax* sp.
- Leptoceridae
  - *Oecetis* sp.

Lepidoptera

- Pyralidae

Diptera

- Tipulidae
  - *Dicranota* sp.
  - *Pedicia* sp.
  - *Ormosia* sp.
  - *Limnophila* sp.
  - *Holorusia* sp.
- Psychodidae
  - *Pericoma* sp.
- Thaumaleidae
- Ceratopogonidae
- Chironomidae
  - Unidentified
- Tanypodinae
  - *Ablabesmyia* sp.
  - *Larsia* sp.
  - *Pentaneurini* sp.
  - *Psectrotanypus* sp.
  - *Thienemannimyia* group sp.
- Diamesinae
  - *Diamesa* sp.
  - *Monodiamesa* sp.
  - *Prodiamesa* sp.
  - *Odontomesa* sp.
- Podonominae
  - *Parachlus* sp.
- Orthocladiinae
  - *Acricotopus* sp.
  - *Chaetocladius* sp.
  - *Corynoneura* sp.
  - *Cricotopus cricotopus*
  - *Cricotopus cricotopus bicinctus*
  - *Cricotopus cricotopus trifascia*

- *Diplocladius* sp.
- *Limnophyes* sp.
- *Eukieferiella* sp.
- *Orthocladius euorthocladius*
- *Orthocladius euorthocladius* sp. 17
- *Orthocladius* sp.
- *Parakiefferiella* sp.
- *Paraphaenocladius* sp.
- *Parametriocnemus* sp.
- *Pseudosmittia* sp.
- *Parorthocladius* sp.
- *Thienemanniella* sp.
- *Orthocladiinae* sp. 2
- *Orthocladiinae* sp. 5

Chironominae
- *Chironomini* sp.
- *Chironomus* sp. group 2
- *Paratendipes* sp.
- *Paracladopelma* sp.
- *Phaenopsectra phaenopsectra*
- *Polypedilum* sp.
- *Polypedilum tripodura* group
- *Stictochironomus* sp.
- *Tanytarsini* sp.
- *Tanytarsus* sp.
- *Cladotanytarsus* sp.
- *Micropsectra* sp.
- *Rheotanytarsus* sp.

Simuliidae
- *Simulium* sp.

Stratiomyidae
- *Euparyphus* sp.
- *Stratiomys* sp.

Tabanidae
- *Chrysops* sp.
- *Tabanus* sp.

Rhagionidae
- *Atherix variegata*

Empididae
- *Clinocera* sp.

Ephydridae

Anthomyiidae
- *Limnophora aequifrons*
- *Limnophora discreta*

RBOSP PROGRESS REPORT

APPENDIX E-12-2

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-12-2

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

SITE = 01 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 10.1

TAXON	REP A	REP B	REP C	MEAN
PLATYHELMINTHES				
TURBELLARIA				
TRICLADIDA				
UNIDENTIFIED	2932	1032	507	1490.33
NEMATODA			36	12.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
NAIDIDAE				
CHAETOGASTER DIASTROPHUS	18			6.00
ARTHROPODA				
ARACHNOIDEA				
ACARI		18		6.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	5557	4308	1358	3741.00
BAETIS SP				
LARVAE	272		54	108.67
PLECOPTERA				
UNIDENTIFIED				
LARVAE	11765	10009	4453	8742.33
TRICHOPTERA				
UNIDENTIFIED				
LARVAE		18		6.00
HYDROPSYCHIDAE				
HYDROPSYCHE SP				
LARVAE			18	6.00

2.4.5.666

RBOSP PROGRESS REPORT

APPENDIX E-12-2 (Continued)

SITE = 01 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
LIMNEPHILIDAE				
UNIDENTIFIED				
LARVAE		54		18.00
HESPEROPHYLAX SP				
LARVAE	54			18.00
DIPTERA				
TIPULIDAE				
UNIDENTIFIED				
LARVAE			18	6.00
OPHOSIA SP				
LARVAE	18			6.00
DICRANOTA SP				
LARVAE	91	163	72	108.67
PEDICIA SP				
LARVAE	36			12.00
HOLORUSIA SP				
LARVAE	145	272	36	151.00
PSYCHODIDAE				
PERICOMA SP				
LARVAE		18		6.00
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	380	253	36	223.00

APPENDIX E-12-2 (Continued)

SITE = 01 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	91	36		42.33
DIAMESINAE				
DIAMESA SP				
LARVAE	18			6.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	36	18	36	30.00
CORYNONEURA SP				
LARVAE	36	54	18	36.00
EUKIEFFERIELLA SP				
LARVAE	36	91	18	48.33
ORTHOCLADIUS SP				
LARVAE	507	72	36	205.00
PARAPHAENOCLADIUS SP				
LARVAE	54	36		30.00
PARAMETRIOCNEMUS SP				
LARVAE		18		6.00
PARORTHOCLADIUS SP				
LARVAE	91	18		36.33

2.4.5.668

APPENDIX E-12-2 (Continued)

SITE = 01 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	109	127	18	84.67
STRATIOMYIDAE				
EUPARYPHUS SP				
LARVAE	72	54	36	54.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	18			6.00
LIMNOPHORA DISCRETA				
LARVAE	18	18		12.00

APPENDIX E-12-2 (Continued)

SITE = 02 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	18		54	24.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	72	54	163	96.33
NAIDIDAE				
CHAETOGASTER DIASTROPHUS				
---------- ----------			54	18.00
ARTHROPODA				
ARACHNOIDEA				
ACARI			18	6.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	670	2136	1955	1587.00
BAETIS SP				
------ --				
LARVAE	18	308	253	193.00
PLECOPTERA				
UNIDENTIFIED				

LARVAE	579	1611	2987	1725.67
TRICHOPTERA				
UNIDENTIFIED				

LARVAE			199	66.33
LIMNEPHILIDAE				
UNIDENTIFIED				

LARVAE	127	72	706	301.67

APPENDIX E-12-2 (Continued)

SITE = 02 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
TIPULIDAE				
UNIDENTIFIED				
LARVAE			18	6.00
ORMUSIA SP				
LARVAE			36	12.00
DICRANOTA SP				
LARVAE	54	72	109	78.33
HOLORUSIA SP				
LARVAE	36	145	290	157.00
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	36	36	54	42.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	36	36	72	48.00
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE			18	6.00
PODONOMINAE				
PARACHLUS SP				
LARVAE		18	127	48.33
DIAMESINAE				
PRODIAMESA SP				
LARVAE			18	6.00

APPENDIX E-12-2 (Continued)

SITE = 02 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE		54	36	30.00
CORYNONEURA SP				
LARVAE	36	91	54	60.33
EUKIEFFERIELLA SP				
LARVAE	72	489	471	344.00
ORTHOCLADIUS SP				
LARVAE			18	6.00
PARAKIEFFERIELLA SP				
LARVAE			18	6.00
PARAPHAENOCLADIUS SP				
LARVAE	18	54	181	84.33
THIENEMANNIELLA SP				
LARVAE			18	6.00
ORTHOCLADIINAE SP. 5				
LARVAE	18			6.00
CHIRONOMINAE				
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	18		72	30.00

APPENDIX E-12-2 (Continued)

SITE = 02 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	362	36	851	416.33
STRATIOMYIDAE				
UNIDENTIFIED				
LARVAE			18	6.00
EUPARYPHUS SP				
LARVAE			18	6.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	181	54	235	156.67
LIMNOPHORA DISCRETA				
LARVAE			18	6.00

APPENDIX E-12-2 (Continued)

SITE = 03 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	36	18	36	30.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	36	54	18	36.00
NAIDIDAE				
NAIS SP	290	525	416	410.33
NAIS BEHNINGI	18			6.00
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	109	54	18	60.33
PLECOPTERA				
UNIDENTIFIED				
LARVAE	18	36		18.00
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS		18		6.00
HYDROPHILIDAE				
CYMBIODYTA SP				
ADULTS		18		6.00
TRICHOPTERA				
LIMNEPHILIDAE				
UNIDENTIFIED				
LARVAE	18			6.00

APPENDIX E-12-2 (Continued)

SITE = 03 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPUDA				
INSECTA				
DIPTERA				
THAUMALEIDAE				
UNIDENTIFIED				
LARVAE		18	18	12.00
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	36	91	72	66.33
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	54	54	72	60.00
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE	272		199	157.00
DIAMESINAE				
DIAMESA SP				
LARVAE	434	434	199	355.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	36	380	199	205.00
EUKIEFFERIELLA SP				
LARVAE	308	760	199	422.33
ORTHOCLADIUS SP				
LARVAE	833	2244	1937	1671.33
PARAPHAENOCLADIUS SP				
LARVAE	1502	1140	1738	1460.00

2.4.5.675

APPENDIX E-12-2 (Continued)

SITE = 03 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
PARAMETRIOCNEMUS SP				
LARVAE			54	18.00
CHIRONOMINAE				
PARATENDIPES SP				
LARVAE	36	145	199	126.67
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	36			12.00
MICROPSECTRA SP				
LARVAE	235	91	199	175.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	72	181	18	90.33
STRATIOMYIDAE				
UNIDENTIFIED				
LARVAE		18		6.00
EUPARYPHUS SP				
LARVAE			18	6.00
TABANIDAE				
CHRYSOPS SP				
LARVAE		18		6.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFERONS				
LARVAE	109	109	91	103.00

APPENDIX E-12-2 (Continued)

SITE = 03 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
ANTHOMYIIDAE				
LIMNOPHORA DISCRETA				
LARVAE			18	6.00

2.4.5.677

APPENDIX E-12-2 (Continued)

SITE = 04 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA			18	6.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	18		18	12.00
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	471	1303	2715	1496.33
BAETIS SP				
LARVAE	91	127	634	284.00
PLECOPTERA				
UNIDENTIFIED				
LARVAE	18	199	525	247.33
DIPTERA				
UNIDENTIFIED				
PUPAE			18	6.00
TIPULIDAE				
HOLORUSIA SP				
LARVAE	18	18	109	48.33
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	18		36	18.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE			18	6.00

APPENDIX E-12-2 (Continued)

SITE = 04 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
EUKIEFFERIELLA SP				
LARVAE	36	54	36	42.00
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE			18	6.00
PARAPHAENOCLADIUS SP				
LARVAE	54	54	181	96.33
PARAMETRIOCNEMUS SP				
LARVAE	18		109	42.33
PSEUDOSMITTIA SP				
LARVAE		18		6.00
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE		18		6.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	72	308	778	386.00
SIMULIUM SP				
PUPAE	18	36	36	30.00
EMPIDIDAE				
UNIDENTIFIED				
LARVAE		18		6.00

APPENDIX E-12-2 (Continued)

SITE = 04 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE		54	72	42.00
LIMNOPHORA DISCRETA				
LARVAE			36	12.00

APPENDIX E-12-2 (Continued)

SITE = 05 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	36	36	18	30.00
MOLLUSCA				
GASTROPODA				
BASOMMATOPHORA				
PHYSIDAE				
PHYSA SP				
----- --	181	91	18	96.67
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
RHYACODRILINAE SP				
---------- --	2100	2498	923	1840.33
IMMATURES WITH CAP. CHAETAE SP				
--------- ---- --- ------- --	163	36	18	72.33
IMMATURES W/O CAP. CHAETAE SP				
--------- - - --- ------- --	54	127		60.33
NAIDIDAE				
NAIS SP				
---- --	18			6.00
ARTHROPODA				
ARACHNOIDEA				
ACARI	217	199	91	169.00
CRUSTACEA				
AMPHIPODA				
TALITRIDAE				
HYALELLA AZTECA				
-------- - ----	3312	3240	3656	3402.67
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	453	453	362	422.67

APPENDIX E-12-2 (Continued)

SITE = 05 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
ODONATA				
ZYGOPTERA				
COENAGRIONIDAE				
UNIDENTIFIED				
LARVAE	72	272	145	163.00
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS	36		72	36.00
TRICHOPTERA				
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	54	18		24.00
HYDROPSYCHE SP				
LARVAE	54		36	30.00
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	308	362	145	271.67
DIPTERA				
TIPULIDAE				
HOLORUSIA SP				
LARVAE	54	18	18	30.00
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	1285	1158	1086	1176.33
CHIRONOMIDAE				
UNIDENTIFIED				
LARVAE			36	12.00
UNIDENTIFIED				
PUPAE	199	127	217	181.00

2.4.5.682

APPENDIX E-12-2 (Continued)

SITE = 05 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE		18		6.00
DIAMESINAE				
DIAMESA SP				
LARVAE	1213	434	1828	1158.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	72		36	36.00
CORYNONEURA SP				
LARVAE		36	109	48.33
CRICOTOPUS CRICOTOPUS				
LARVAE	18		36	18.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE		18		6.00
DIPLOCLADIUS SP				
LARVAE	36			12.00
EUKIEFFERIELLA SP				
LARVAE	434	109	434	325.67
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	36		36	24.00

APPENDIX E-12-2 (Continued)

SITE = 05 REPS= 3 SITE DESC = HEADWATER STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
ORTHOCLADIUS SP				
LARVAE	543	362	1321	742.00
THIENEMANNIELLA SP				
LARVAE	54			18.00
CHIRONOMINAE				
TANYTARSUS SP				
LARVAE	18			6.00
MICROPSECTRA SP				
LARVAE	127	217	36	126.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	11457	1647	10661	7921.67
SIMULIUM SP				
PUPAE	2100	706	3566	2124.00
TABANIDAE				
TABANUS SP				
LARVAE		18		6.00
ANTHOMYIIDAE				
LIMNOPHORA ACQUIFRONS				
LARVAE	72	54	72	66.00

APPENDIX E-12-2 (Continued)

SITE = 07 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA		18		6.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	54	18	127	66.33
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	3421	1412	2136	2323.00
BAETIS SP				
LARVAE	127	181	72	126.67
PLECOPTERA				
UNIDENTIFIED				
LARVAE	127	91	109	109.00
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE			18	6.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	36	18		18.00
TANYPODINAE				
UNIDENTIFIED				
LARVAE		18		6.00
PENTANEURINI SP				
LARVAE	18			6.00

APPENDIX E-12-2 (Continued)

SITE = 07 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE	18		18	12.00
THIENEMANNIMYIA GROUP SP				
LARVAE	72		18	30.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	18	36	36	30.00
EUKIEFFERIELLA SP				
LARVAE	91	36	54	60.33
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE		54		18.00
PARAPHAENOCLADIUS SP				
LARVAE	326	181	199	235.33
PARAMETRIOCNEMUS SP				
LARVAE	36	91		42.33
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	145	91	109	115.00
EMPIDIDAE				
UNIDENTIFIED				
LARVAE	109		109	72.67

2.4.5.686

APPENDIX E-12-2 (Continued)

SITE = 07 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	18	36		18.00
LIMNOPHORA DISCRETA				
LARVAE		18		6.00

2.4.5.687

APPENDIX E-12-2 (Continued)

SITE = 08 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA		18	36	18.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE		36		12.00
NAIDIDAE				
NAIS SP				
---- --	145	1122	109	458.67
NAIS BEHNINGI				
---- --------	18			6.00
ARTHROPODA				
ARACHNOIDEA				
ACARI			18	6.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	290	362	579	410.33
BAETIS SP				
------ --				
LARVAE	145	235	362	247.33
HEPTAGENIIDAE &				
EPEORUS SP				
------- --				
LARVAE		36		12.00
PLECOPTERA				
UNIDENTIFIED				

LARVAE	4869	11512	11349	9243.33

SITE = 08 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
COLEOPTERA				
DYTISCIDAE				
UNIDENTIFIED				
LARVAE			18	6.00
UNIDENTIFIED				
ADULTS			18	6.00
DIPTERA				
TIPULIDAE				
UNIDENTIFIED				
LARVAE	18			6.00
DICRANOTA SP				
LARVAE			18	6.00
PEDICIA SP				
LARVAE		36	18	18.00
HOLORUSIA SP				
LARVAE	18	18	54	30.00
PSYCHODIDAE				
PERICOMA SP				
LARVAE		18		6.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	54	91	36	60.33
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE	18			6.00

APPENDIX E-12-2 (Continued)

SITE = 08 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE		18		6.00
DIAMESINAE				
DIAMESA SP				
LARVAE	54	72	18	48.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE		18	54	24.00
CORYNONEURA SP				
LARVAE		36		12.00
EUKIEFFERIELLA SP				
LARVAE	163	253	127	181.00
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	109	91	109	103.00
ORTHOCLADIUS SP				
LARVAE	54	54		36.00
PARAPHAENOCLADIUS SP				
LARVAE	18	344	344	235.33
PARAMETRIOCNEMUS SP				
LARVAE	18	91		36.33

APPENDIX E-12-2 (Continued)

SITE = 08 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
THIENEMANNIELLA SP				
LARVAE	18	434	145	199.00
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE		36	18	18.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	344	362	217	307.67
STRATIOMYIDAE				
EUPARYPHUS SP				
LARVAE		18	18	12.00
EMPIDIDAE				
UNIDENTIFIED				
LARVAE	18	54		24.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	18	91	127	78.67
LIMNOPHORA DISCRETA				
LARVAE	36	145	91	90.67

APPENDIX E-12-2 (Continued)

SITE = 09 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	72	18	36	42.00
TUBIFICIDAE				
IMMATURES WITH CAP. CHAETAE SP			18	6.00
NAIDIDAE				
NAIS SP		18	18	12.00
ARTHROPODA				
ARACHNOIDEA				
ACARI		18	18	12.00
INSECTA				
COLLEMBOLA	18			6.00
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	1665	1991	1557	1737.67
BAETIS SP				
LARVAE	109	18	18	48.33
PLECOPTERA				
UNIDENTIFIED				
LARVAE	199	127	36	120.67
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE SP				
LARVAE			18	6.00

2.4.5.692

APPENDIX E-12-2 (Continued)

SITE = 09 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE			54	18.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	181	199	652	344.00
TANYPODINAE				
LARSIA SP				
LARVAE	18			6.00
THIENEMANNIMYIA GROUP SP				
LARVAE	18		36	18.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE			18	6.00
EUKIEFFERIELLA SP				
LARVAE	18	18	344	126.67
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE			18	6.00
ORTHOCLADIUS SP				
LARVAE			18	6.00
PARAPHAENOCLADIUS SP				
LARVAE	72	127		66.33

APPENDIX E-12-2 (Continued)

SITE = 09 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
PARAMETRIOCNEMUS SP				
LARVAE		18	18	12.00
CHIRONOMINAE				
TANYTARSUS SP				
LARVAE		18		6.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	525	706	1882	1037.67
SIMULIUM SP				
PUPAE	199	54	597	283.33
EMPIDIDAE				
UNIDENTIFIED				
LARVAE	36	91	109	78.67
EPHYDRIDAE				
UNIDENTIFIED				
PUPAE	18			6.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	36	36		24.00

APPENDIX E-12-2 (Continued)

SITE = 12 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE		36		12.00
ARTHROPODA				
INSECTA				
COLEOPTERA				
DYTISCIDAE				
LACCOPHILUS SP				
ADULTS			18	6.00
DIPTERA				
TIPULIDAE				
ORMOSIA SP				
LARVAE	18			6.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE		18		6.00
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE			18	6.00
THIENEMANNIMYIA GROUP SP				
LARVAE			18	6.00
DIAMESINAE				
DIAMESA SP				
LARVAE	18			6.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE		18	36	18.00
EUKIEFFERIELLA SP				
LARVAE	18	109	109	78.67

2.4.5.695

APPENDIX E-12-2 (Continued)

SITE = 12 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
ORTHOCLADIUS SP				
LARVAE		72	127	66.33
PSEUDOSMITTIA SP				
LARVAE		18	18	12.00
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	18		109	42.33
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	18			6.00

SITE = 13 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE			18	6.00
NAIDIDAE				
NAIS SP				
---- --	54	36	109	66.33
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	18			6.00
BAETIS SP				
------ --				
LARVAE	109	72		60.33
PLECOPTERA				
UNIDENTIFIED				

LARVAE	2226	1195	1014	1478.33
DIPTERA				
TIPULIDAE				
HOLORUSIA SP				
--------- --				
LARVAE	290	344	217	283.67
PSYCHODIDAE				
PERICOMA SP				
-------- --				
LARVAE			18	6.00
CERATOPOGONIDAE				
UNIDENTIFIED				

LARVAE		18		6.00
CHIRONOMIDAE				
UNIDENTIFIED				

PUPAE	18	91	36	48.33

APPENDIX E-12-2 (Continued)

SITE = 13 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE	36	18	91	48.33
DIAMESINAE				
DIAMESA SP				
LARVAE	36	109	36	60.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	18			6.00
CHAETOCLADIUS SP				
LARVAE			18	6.00
EUKIEFFERIELLA SP				
LARVAE	72		54	42.00
ORTHOCLADIUS SP				
LARVAE	72	36	36	48.00
PARAPHAENOCLADIUS SP				
LARVAE	145	18	91	84.67
PARAMETRIOCNEMUS SP				
LARVAE	18			6.00
THIENEMANNIELLA SP				
LARVAE	18		54	24.00

APPENDIX E-12-2 (Continued)

SITE = 13 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	36	36	36	36.00
STRATIOMYIDAE				
EUPARYPHUS SP				
LARVAE	18		18	12.00
EMPIDIDAE				
UNIDENTIFIED				
LARVAE	109		36	48.33
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE	91	72	72	78.33

APPENDIX E-12-2 (Continued)

SITE = 14 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = EKMAN DREDGE CONVERSION FACTOR APPLIED= 44.4

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	44			14.67
TUBIFICIDAE				
LIMNODRILUS UDEKEMIANUS		400		133.33
IMMATURES WITH CAP. CHAETAE SP		133		44.33
IMMATURES W/O CAP. CHAETAE SP		1554		518.00
NAIDIDAE				
NAIS SP	178	266	488	310.67
ARTHROPODA				
CRUSTACEA				
AMPHIPODA				
TALITRIDAE				
HYALELLA AZTECA	44		44	29.33
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	799	400	89	429.33
CALLIBAETIS SP				
LARVAE	266		89	118.33
ODONATA				
ZYGOPTERA				
COENAGRIONIDAE				
UNIDENTIFIED				
LARVAE	44			14.67

APPENDIX E-12-2 (Continued)

SITE = 14 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = EKMAN DREDGE CONVERSION FACTOR APPLIED= 44.4

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
PLECOPTERA				
UNIDENTIFIED				
LARVAE	89			29.67
HEMIPTERA				
CORIXIDAE				
UNIDENTIFIED				
ADULTS	44			14.67
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS	44	44	44	44.00
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	266	44	44	118.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	133		44	59.00
TANYPODINAE				
ABLABESMYIA SP				
LARVAE	44			14.67
PSECTROTANYPUS SP				
LARVAE	44		44	29.33
THIENEMANNIMYIA GROUP SP				
LARVAE	44			14.67
DIAMESINAE				
DIAMESA SP				
LARVAE		44		14.67

APPENDIX E-12-2 (Continued)

SITE = 14 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = EKMAN DREDGE CONVERSION FACTOR APPLIED= 44.4

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE			44	14.67
ACRICOTOPUS SP				
LARVAE	222	133		118.33
PARAMETRIOCNEMUS SP				
LARVAE	44			14.67
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE	44			14.67
CHIRONOMUS SP. GROUP 2				
LARVAE		89		29.67
MICROTENDIPES SP				
LARVAE	444	355	444	414.33
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	44			14.67
TANYTARSINI SP				
LARVAE		89		29.67
TANYTARSUS SP				
LARVAE	44	44		29.33

APPENDIX E-12-2 (Continued)

SITE = 14 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = EKMAN DREDGE CONVERSION FACTOR APPLIED= 44.4

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	577	266	133	325.33
SIMULIIDAE				
UNIDENTIFIED				
LARVAE		133		44.33
EMPIDIDAE				
UNIDENTIFIED				
LARVAE	44			14.67

APPENDIX E-12-2 (Continued)

SITE = 17 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	18	18		12.00
COLEOPTERA				
HYDRAENIDAE				
OCHTHEBIUS SP				
ADULTS	54		36	30.00
DYTISCIDAE				
DERONECTES SP				
ADULTS		109	18	42.33
DIPTERA				
PSYCHODIDAE				
PERICOMA SP				
LARVAE	145	163	54	120.67
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	199	1321	54	524.67
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	54	434	36	174.67
TANYPODINAE				
PSECTROTANYPUS SP				
LARVAE	290	127	615	344.00
THIENEMANNIMYIA GROUP SP				
LARVAE		127		42.33
DIAMESINAE				
DIAMESA SP				
LARVAE		72	127	66.33

APPENDIX E-12-2 (Continued)

SITE = 17 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	54		362	138.67
CORYNONEURA SP				
LARVAE	54			18.00
EUKIEFFERIELLA SP				
LARVAE		72		24.00
ORTHOCLADIUS SP				
LARVAE	145	579	615	446.33
PARAPHAENOCLADIUS SP				
LARVAE		253	362	205.00
PSEUDOSMITTIA SP				
LARVAE			253	84.33
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE		380		126.67
MICROTENDIPES SP				
LARVAE	181	1086	615	627.33
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	416	72	615	367.67

APPENDIX E-12-2 (Continued)

SITE = 17 REPS= 3 SITE DESC = TRACT STATION COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
STICTOCHIRONOMUS SP				
---------- --				
LARVAE	91			30.33
TANYTARSUS SP				
---------- --				
LARVAE	181			60.33
MICROPSECTRA SP				
---------- --				
LARVAE	3747	4217	8634	5532.67
EPHYDRIDAE				
UNIDENTIFIED				

PUPAE	36	36		24.00

APPENDIX E-12-2 (Continued)

SITE = 19 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
MOLLUSCA				
GASTROPODA				
BASOMMATOPHORA				
LYMNAEIDAE				
LYMNAEA SP	2769	959	434	1387.33
PLANORBIDAE				
UNIDENTIFIED	54	36		30.00
ANNELIDA				
HIRUDINEA				
RHYNCHOBDELLIDA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	18			6.00
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
LIMNODRILUS UDEKEMIANUS	18	18		12.00
IMMATURES WITH CAP. CHAETAE SP	1321	742	18	693.67
IMMATURES W/O CAP. CHAETAE SP	217	54		90.33
ARTHROPODA				
ARACHNOIDEA				
ACARI	507	1756	253	838.67
CRUSTACEA				
AMPHIPODA				
TALITRIDAE				
HYALELLA AZTECA	507	1412	163	694.00
INSECTA				
EPHEMERUPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	18			6.00

APPENDIX E-12-2 (Continued)

SITE = 19 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
CAENIDAE				
CAENIS SP				
LARVAE	36	91	18	48.33
ODONATA				
ZYGOPTERA				
CUENAGRIONIDAE				
UNIDENTIFIED				
LARVAE	163	163	72	132.67
ARGIA SP				
LARVAE	18			6.00
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS	290	109	91	163.33
ELMIDAE				
OPTIOSERVUS SP				
LARVAE	18		36	18.00
TRICHOPTERA				
UNIDENTIFIED				
LARVAE	18	127		48.33
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	18	18	54	30.00
LIMNEPHILIDAE				
UNIDENTIFIED				
LARVAE	18	36		18.00
DIPTERA				
THAUMALEIDAE				
UNIDENTIFIED				
LARVAE		54		18.00

APPENDIX E-12-2 (Continued)

SITE = 19 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	1557	1321	308	1062.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	54	18		24.00
TANYPODINAE				
UNIDENTIFIED				
LARVAE	18			6.00
ABLABESMYIA SP				
LARVAE	18			6.00
LARSIA SP				
LARVAE		18		6.00
THIENEMANNIMYIA GROUP SP				
LARVAE	18	36	91	48.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	36	145		60.33
CRICOTOPUS CRICOTOPUS				
LARVAE		18		6.00
EUKIEFFERIELLA SP				
LARVAE	18	36		18.00

2.4.5.709

APPENDIX E-12-2 (Continued)

SITE = 19 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
LIMNOPHYES SP				
LARVAE		54		18.00
ORTHOCLADIUS SP				
LARVAE	1466	1539	416	1140.33
PARAPHAENOCLADIUS SP				
LARVAE		54		18.00
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE		18		6.00
CRYPTOCHIRONOMUS SP				
LARVAE	54	54	18	42.00
PARATENDIPES SP				
LARVAE	109	91	18	72.67
MICROPSECTRA SP				
LARVAE	959	561	272	597.33
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	2389	1213	416	1339.33
SIMULIUM SP				
PUPAE	109	54		54.33

APPENDIX E-12-2 (Continued)

SITE = 19 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
STRATIOMYIDAE				
STRATIOMYS SP				
LARVAE		18		6.00

2.4.5.711

APPENDIX E-12-2 (Continued)

SITE = 20 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	471	1249	778	832.67
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
LIMNODRILUS UDEKEMIANUS	72	91	253	138.67
RHYACODRILINAE SP			36	12.00
IMMATURES WITH CAP. CHAETAE SP			18	6.00
IMMATURES W/O CAP. CHAETAE SP	1683	1973	1738	1798.00
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	362	2606	489	1152.33
ODONATA				
ZYGOPTERA				
CUENAGRIONIDAE				
UNIDENTIFIED				
LARVAE	54	54		36.00
ANISOPTERA				
GOMPHIDAE				
UNIDENTIFIED				
LARVAE		36		12.00
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS		18		6.00

APPENDIX E-12-2 (Continued)

SITE = 20 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	2208	1440	778	1478.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	18	18		12.00
TANYPODINAE				
UNIDENTIFIED				
LARVAE			18	6.00
THIENEMANNIMYIA GROUP SP				
LARVAE	18			6.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE			36	12.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE		54		18.00
ORTHOCLADIUS SP				
LARVAE	36	235	54	108.33
PARAPHAENOCLADIUS SP				
LARVAE		54	18	24.00
CHIRONOMINAE				
CRYPTOCHIRONOMUS SP				
LARVAE	36			12.00

2.4.5.713

APPENDIX E-12-2 (Continued)

SITE = 20 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE			18	6.00
TANYTARSUS SP				
LARVAE	18	54		24.00
MICROPSECTRA SP				
LARVAE	127	217	199	181.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	145	217	36	132.67

APPENDIX E-12-2 (Continued)

SITE = 21 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	18			6.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
LIMNODRILUS UDEKEMIANUS			18	6.00
IMMATURES W/O CAP. CHAETAE SP	18	18	54	30.00
ARTHROPODA				
ARACHNOIDEA				
ACARI	72	36	36	48.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	36	18	127	60.33
CALLIBAETIS SP				
LARVAE		18		6.00
ODONATA				
ZYGOPTERA				
COENAGRIONIDAE				
UNIDENTIFIED				
LARVAE	36	36	36	36.00
COLEOPTERA				
DYTISCIDAE				
DERONECTES SP				
ADULTS			18	6.00
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE		36	72	36.00

APPENDIX E-12-2 (Continued)

SITE = 21 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE		54	72	42.00
TANYPODINAE				
UNIDENTIFIED				
LARVAE			18	6.00
THIENEMANNIMYIA GROUP SP				
LARVAE	18	18	18	18.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	18		18	12.00
CRICOTOPUS CRICOTOPUS				
LARVAE			72	24.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE			18	6.00
EUKIEFFERIELLA SP				
LARVAE	54	18	72	48.00
ORTHOCLADIUS SP				
LARVAE	36	18	54	36.00
PARAPHAENOCLADIUS SP				
LARVAE		18		6.00

APPENDIX E-12-2 (Continued)

SITE = 21 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROPSECTRA SP				
LARVAE	127	36	634	265.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	561	778	1032	790.33
SIMULIUM SP				
PUPAE	18	54	54	42.00
ANTHOMYIIDAE				
LIMNOPHORA AEQUIFRONS				
LARVAE		18		6.00

2.4.5.717

APPENDIX E-12-2 (Continued)

SITE = 22 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	18			6.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
NAIDIDAE				
NAIS SP				
---- --			36	12.00
ARTHROPODA				
INSECTA				
HEMIPTERA				
CORIXIDAE				
UNIDENTIFIED				

LARVAE		18		6.00
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				

LARVAE	72	36	91	66.33
CHIRONOMIDAE				
UNIDENTIFIED				

PUPAE		36	72	36.00
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
---------- ----- --				
LARVAE		18	36	18.00
DIAMESINAE				
ODONTOMESA SP				
---------- --				
LARVAE			18	6.00
ORTHOCLADIINAE				
UNIDENTIFIED				

LARVAE	54		72	42.00
CRICOTOPUS SP				
---------- --				
LARVAE		18		6.00

APPENDIX E-12-2 (Continued)

SITE = 22 REPS= 3 SITE DESC = YELLOW CREEK COLLECTION METHOD = ELLIPSE SURBER CONVERSION FACTOR APPLIED= 18.1

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
FUKIEFFERIELLA SP				
LARVAE	163	54	72	96.33
ORTHOCLADIUS SP				
LARVAE	217	36	272	175.00
PAPAPHAENOCLADIUS SP				
LARVAE	91		72	54.33
CHIRONOMINAE				
CHIRONOMUS SP. GROUP 2				
LARVAE	36	18	36	30.00
STICTOCHIRONOMUS SP				
LARVAE		18	18	12.00
TANYTARSUS SP				
LARVAE			18	6.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	72	91	109	90.67

APPENDIX E-12-2 (Continued)

SITE = 23 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
IMMATURES WITH CAP. CHAETAE SP	20			6.67
IMMATURES W/O CAP. CHAETAE SP	20	59	20	33.00
NAIDIDAE				
NAIS SP		20	117	45.67
NAIS BEHNINGI	117	39		52.00
PRISTINA SP	20			6.67
ARTHROPODA				
ARACHNOIDEA				
ACARI	20		39	19.67
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	176		254	143.33
BAETIS SP				
LARVAE	59	20	156	78.33
HEPTAGENIIDAE				
HEPTAGENIA SP				
LARVAE	20			6.67

2.4.5.720

SITE = 23 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 12.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE	1287		176	487.67
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE	20			6.67
CHOROTERPES SP				
LARVAE	20			6.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	2165	156	1619	1313.33
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	273	78	312	221.00
PLECOPTERA				
UNIDENTIFIED				
LARVAE	410	20	117	182.33
SYSTELLOGNATHA				
PERLODIDAE				
ISOPERLA SP				
LARVAE	20			6.67
ISOGENOIDES SP				
LARVAE	20			6.67
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE	20			6.67

APPENDIX E-12-2 (Continued)

SITE = 23 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
COLEOPTERA				
ELMIDAE				
ZAITZEVIA SP				
LARVAE	20			6.67
TRICHOPTERA				
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	156		39	65.00
HYDROPSYCHE SP				
LARVAE	2516		312	942.67
CHEUMATOPSYCHE SP				
LARVAE	117		20	45.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	39		20	19.67
LEPTOCERIDAE				
OECETIS SP				
LARVAE	20			6.67
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE			39	13.00
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	137	78	137	117.33
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	273		98	123.67

APPENDIX E-12-2 (Continued)

SITE = 23 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	78	20	39	45.67
CRICOTOPUS SP				
LARVAE	20			6.67
CRICOTOPUS CRICOTOPUS				
LARVAE	20			6.67
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	39			13.00
EUKIEFFERIELLA SP				
LARVAE	117		39	52.00
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	98			32.67
ORTHOCLADIUS SP				
LARVAE	624	39	624	429.00
PARAKIEFFERIELLA SP				
LARVAE		20		6.67
PARAPHAENOCLADIUS SP				
LARVAE			20	6.67

APPENDIX E-12-2 (Continued)

SITE = 23 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
ORTHOCLADIINAE SP. 1				
LARVAE			20	6.67
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE		20		6.67
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE		20		6.67
POLYPEDILUM SP				
LARVAE		20		6.67
POLYPEDILUM TRIPODURA GRP.				
LARVAE		39		13.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE			20	6.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE	78		20	32.67

APPENDIX E-12-2 (Continued)

SITE = 24 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA		20	20	13.33
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
LIMNODRILUS HOFFMEISTERI				
TYPICAL	20		20	13.33
IMMATURES WITH CAP. CHAETAE SP	20		20	13.33
IMMATURES W/O CAP. CHAETAE SP	156	39	624	273.00
NAIDIDAE				
NAIS SP	39		176	71.67
NAIS BEHNINGI	176	78	195	149.67
PRISTINA SP	20			6.67
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	234	59	819	370.67
BAETIS SP				
LARVAE	117	39	137	97.67

SITE = 24 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 10.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
DACTYLOBAETIS SP				
LARVAE	20			6.67
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE	156	20	293	156.33
LEPTOPHLEBIIDAE				
CHOROTERPES SP				
LARVAE	78		20	32.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	1697	546	3491	1911.33
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	234	78	507	273.00
ODONATA				
ANISOPTERA				
GOMPHIDAE				
UNIDENTIFIED				
LARVAE			39	13.00
PLECOPTERA				
UNIDENTIFIED				
LARVAE	78	20	254	117.33
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE	20			6.67
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE		20	20	13.33

APPENDIX E-12-2 (Continued)

SITE = 24 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	59	39	117	71.67
HYDROPSYCHE SP				
LARVAE	293	117	1073	494.33
CHEUMATOPSYCHE SP				
LARVAE	20	20	390	143.33
HYDROPTILIDAE				
MAYATRICHIA SP				
PUPAE	20			6.67
LEPTOCERIDAE				
OECETIS SP				
LARVAE	20		20	13.33
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	59		98	52.33
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	98	59	39	65.33
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	20	78	59	52.33
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE			20	6.67

2.4.5.727

APPENDIX E-12-2 (Continued)

SITE = 24 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE		39	78	39.00
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20	39	39	32.67
EUKIEFFERIELLA SP				
LARVAE	39		273	104.00
ORTHOCLADIUS SP				
LARVAE	215	254	78	182.33
PARAPHAENOCLADIUS SP				
LARVAE			20	6.67
ORTHOCLADIINAE SP. 4				
LARVAE	20			6.67
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE	293		215	169.33
POLYPEDILUM SP				
LARVAE	39			13.00
POLYPEDILUM TRIPODURA GRP.				
LARVAE	59			19.67

APPENDIX E-12-2 (Continued)

SITE = 24 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
RHEOTANYTARSUS SP				
LARVAE			20	6.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE			20	6.67
PHAGIONIDAE				
ATHERIX VARIEGATA				
LARVAE			20	6.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE		20		6.67

2.4.5.729

APPENDIX E-12-2 (Continued)

SITE = 25 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = D-FRAME CONVERSION FACTOR APPLIED= 1.0

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
UNIDENTIFIED				
----------	5	4	8	5.67
ARTHROPODA				
ARACHNOIDEA				
ACARI		1		.33
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	17	12	12	13.67
BAETIS SP				
------ --				
LARVAE	29	13	7	16.33
HEPTAGENIIDAE				
HEPTAGENIA SP				
---------- --				
LARVAE	8	21	4	11.00
RHITHROGENA SP				
---------- --				
LARVAE	33	32	16	27.00
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
---------- ---------				
LARVAE	5	2	2	3.00
EPHEMERELLIDAE				
EPHEMERELLA SP				
---------- --				
LARVAE	99	116	38	84.33
TRICORYTHIDAE				
TRICORYTHODES SP				
---------- --				
LARVAE	3	3	6	4.00

SITE = 25 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = D-FRAME CONVERSION FACTOR APPLIED= 1.0

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
ODONATA				
ANISOPTERA				
GOMPHIDAE				
UNIDENTIFIED				
LARVAE		1		.33
PLECOPTERA				
UNIDENTIFIED				
LARVAE	16	9	2	9.00
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE	1	2		1.00
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE		1	1	.67
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	19	15	7	13.67
HYDROPSYCHE SP				
LARVAE	273	169	45	162.33
CHEUMATOPSYCHE SP				
LARVAE	12	10	10	10.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	2	4	2	2.67
MAYATRICHIA SP				
LARVAE		1		.33

APPENDIX E-12-2 (Continued)

SITE = 25 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = D-FRAME CONVERSION FACTOR APPLIED= 1.0

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS SP				
LARVAE		1		.33
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	2	2	8	4.00
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	3		5	2.67
CHIRONOMIDAE				
UNIDENTIFIED				
LARVAE	12	17	12	13.67
UNIDENTIFIED				
PUPAE	4	6	1	3.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	3			1.00
EMPIDIDAE				
CLINOCERA SP				
LARVAE	2	1	1	1.33

APPENDIX E-12-2 (Continued)

SITE = 26 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20	20	20	20.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE		39		13.00
TUBIFICIDAE				
LIMNODRILUS CLAPAREDEIANUS				
TYPICAL			20	6.67
LIMNODRILUS HOFFMEISTERI				
TYPICAL		59	20	26.33
IMMATURES WITH CAP. CHAETAE SP	39	20		19.67
IMMATURES W/O CAP. CHAETAE SP	176	234	585	331.67
NAIDIDAE				
NAIS SP			156	52.00
NAIS BEHNINGI	234	683	20	312.33
PRISTINA SP	20			6.67

APPENDIX E-12-2 (Continued)

SITE = 26 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
ARACHNOIDEA				
ACARI	78	39	156	91.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	254	254	137	215.00
BAETIS SP				
LARVAE	59			19.67
HEPTAGENIIDAE				
HEPTAGENIA SP				
LARVAE	59	195	20	91.33
RHITHROGENA SP				
LARVAE	117	59	20	65.33
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	2438	2087	2282	2269.00
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	780	761	566	702.33
PLECOPTERA				
UNIDENTIFIED				
LARVAE	156	273	20	149.67
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA GIULIANII				
ADULTS	20			6.67

APPENDIX E-12-2 (Continued)

SITE = 26 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPUDA				
INSECTA				
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE	39		59	32.67
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	20	59	20	33.00
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	312	332	78	240.67
HYDROPSYCHE SP				
LARVAE	761	1170	878	936.33
CHEUMATOPSYCHE SP				
LARVAE	137	39	39	71.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	195	137	566	299.33
LEPTOCERIDAE				
OECETIS SP				
LARVAE			39	13.00
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	78	39	39	52.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	98	39	137	91.33

APPENDIX E-12-2 (Continued)

SITE = 26 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE		20		6.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	59	39	176	91.33
CRICOTOPUS CRICOTOPUS				
LARVAE	78	117	39	78.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE			20	6.67
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	117	20	78	71.67
EUKIEFFERIELLA SP				
LARVAE	117	78	59	84.67
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE		20		6.67
ORTHOCLADIUS SP				
LARVAE	371	195	449	338.33
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE	20	20		13.33

APPENDIX E-12-2 (Continued)

SITE = 26 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
CRYPTOCHIRONOMUS SP				
LARVAE			20	6.67
MICROTENDIPES SP				
LARVAE	78	332	410	273.33
POLYPEDILUM TRIPODURA GRP.				
LARVAE	20	39	78	45.67
CLADOTANYTARSUS SP				
LARVAE			20	6.67
RHEOTANYTARSUS SP				
LARVAE		20		6.67
RHAGIONIDAE				
ATHERIX VARIEGATA				
LARVAE		39		13.00
EMPIDIDAE				
CLINOCERA SP				
LARVAE			39	13.00

APPENDIX E-12-2 (Continued)

SITE = 27 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20		20	13.33
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
LIMNODRILUS CLAPAREDEIANUS				
TYPICAL	39			13.00
LIMNODRILUS HOFFMEISTERI				
TYPICAL	78			26.00
IMMATURES WITH CAP. CHAETAE SP	20			6.67
IMMATURES W/O CAP. CHAETAE SP	176	312	780	422.67
NAIDIDAE				
NAIS SP	39	39	59	45.67
NAIS BEHNINGI	254	78	59	130.33
ARTHROPODA				
ARACHNOIDEA				
ACARI		59	20	26.33
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	98	371	683	384.00

APPENDIX E-12-2 (Continued)

SITE = 27 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
BAETIS SP				
LARVAE	39	20	39	32.67
DACTYLOBAETIS SP				
LARVAE	20		20	13.33
HEPTAGENIIDAE				
UNIDENTIFIED				
LARVAE	20			6.67
HEPTAGENIA SP				
LARVAE	254	59	39	117.33
RHITHROGENA SP				
LARVAE		117	98	71.67
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE			39	13.00
CHOROTERPES SP				
LARVAE			20	6.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	312	624	683	539.67
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	98	176	156	143.33

2.4.5.739

APPENDIX E-12-2 (Continued)

SITE = 27 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.

TAXON	REP A	REP B	REP C	MEAN
ARTHROPUDA				
INSECTA				
ODONATA				
ANISOPTERA				
GUMPHIDAE				
UNIDENTIFIED				
LARVAE			20	6.67
OPHIOGOMPHUS SEVERUS				
LARVAE		20		6.67
PLECOPTERA				
UNIDENTIFIED				
LARVAE	98	98	234	143.33
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE	20		59	26.33
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE			78	26.00
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	20	195	78	97.67
HYDROPSYCHE SP				
LARVAE	117	195	663	325.00
CHEUMATOPSYCHE SP				
LARVAE			98	32.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	98	59		52.33

APPENDIX E-12-2 (Continued)

SITE = 27 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS SP				
LARVAE		20		6.67
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	20	20	98	46.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	59	156	20	78.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	20	98		39.33
CRICOTOPUS CRICOTOPUS				
LARVAE	20	20	20	20.00
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	39	39	59	45.67
EUKIEFFERIELLA SP				
LARVAE	20	39	59	39.33
ORTHOCLADIUS SP				
LARVAE	254	293	117	221.33
PARAKIEFFERIELLA SP				
LARVAE	20			6.67

2.4.5.741

APPENDIX E-12-2 (Continued)

SITE = 27 REPS= 3 SITE DESC = UPPER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
PARAPHAENOCLADIUS SP				
LARVAE	59		39	32.67
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE	234	59	39	110.67
POLYPEDILUM SP				
LARVAE	20	39		19.67
POLYPEDILUM TRIPUDURA GRP.				
LARVAE			176	58.67
RHEOTANYTARSUS SP				
LARVAE		39		13.00

APPENDIX E-12-2 (Continued)

SITE = 20 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20			6.67
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	20			6.67
TUBIFICIDAE				
LIMNODRILUS HOFFMEISTERI				
TYPICAL	20	20	20	20.00
IMMATURES WITH CAP. CHAETAE SP		20	20	13.33
IMMATURES W/O CAP. CHAETAE SP	59	410	741	403.33
NAIDIDAE				
NAIS SP	78	117	59	84.67
NAIS BEHNINGI	429	78	39	182.00
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	20			6.67
DACTYLOBAETIS SP				
LARVAE	20			6.67

APPENDIX E-12-2 (Continued)

SITE = 28 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
HEPTAGENIIDAE				
HEPTAGENIA SP				
LARVAE		20	20	13.33
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	234		59	97.67
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	39			13.00
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE SP				
LARVAE	39		20	19.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE		20		6.67
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	176	59	78	104.33
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	78	20	20	39.33
DIAMESINAE				
MONODIAMESA SP				
LARVAE			20	6.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	39			13.00

SITE = 28 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
CRICOTOPUS CRICOTOPUS				
LARVAE	98		20	39.33
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20			6.67
ORTHOCLADIUS SP				
LARVAE	117	20	20	52.33
PARAKIEFFERIELLA SP				
LARVAE	117	59	39	71.67
ORTHOCLADIINAE SP. 4				
LARVAE	20			6.67
CHIRONOMINAE				
CRYPTOCHIRONOMUS SP				
LARVAE	20			6.67
MICROTENDIPES SP				
LARVAE	20		39	19.67
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	20			6.67
POLYPEDILUM SP				
LARVAE	20		39	19.67

APPENDIX E-12-2 (Continued)

SITE = 28 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
POLYPEDILUM TRIPODURA GRP.				
LARVAE		39		13.00
STICTOCHIRONOMUS SP				
LARVAE			20	6.67
MICROPSECTRA SP				
LARVAE			20	6.67

APPENDIX E-12-2 (Continued)

SITE = 29 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE	20			6.67
TUBIFICIDAE				
IMMATURES WITH CAP. CHAETAE SP	39	20	39	32.67
IMMATURES W/O CAP. CHAETAE SP	156	176	468	266.67
NAIDIDAE				
NAIS SP	59	39	839	312.33
NAIS BEHNINGI	293	1073	839	735.00
ARTHROPODA				
ARACHNOIDEA				
ACARI		78		26.00
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	858	800	995	884.33
BAETIS SP				
LARVAE	995	293	176	488.00
HEPTAGENIIDAE				
HEPTAGENIA SP				
LARVAE	117		20	45.67

APPENDIX E-12-2 (Continued)

SITE = 29 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE	2048	956	1638	1547.33
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE		59	20	26.33
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	1716	1287	1931	1644.67
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	176	20	39	78.33
ODONATA				
ANISOPTERA				
GOMPHIDAE				
UNIDENTIFIED				
LARVAE	20			6.67
PLECOPTERA				
UNIDENTIFIED				
LARVAE	546	780	1268	864.67
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE		39	20	19.67
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	78	39		39.00
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	312	761	624	565.67

2.4.5.748

APPENDIX E-12-2 (Continued)

SITE = 29 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE SP				
LARVAE	2672	2808	4524	3334.67
CHEUMATOPSYCHE SP				
LARVAE	644	176	273	364.33
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	39	59	20	39.33
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	98		98	65.33
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE	59	20	20	33.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	117	20	117	84.67
TANYPODINAE				
THIENEMANNIMYIA GROUP SP				
LARVAE			39	13.00
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	156	117	78	117.00
CRICOTOPUS CRICOTOPUS				
LARVAE	20	78		32.67

APPENDIX E-12-2 (Continued)

SITE = 29 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	59	20	39	39.33
EUKIEFFERIELLA SP				
LARVAE	468	1131	1385	994.67
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE		156	78	78.00
ORTHOCLADIUS SP				
LARVAE	566	59		208.33
PARAPHAENOCLADIUS SP				
LARVAE			20	6.67
ORTHOCLADIINAE SP. 1				
LARVAE	20			6.67
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE		20	20	13.33
POLYPEDILUM TRIPODURA GRP.				
LARVAE		39	39	26.00
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	20	98	78	65.33

APPENDIX E-12-2 (Continued)

SITE = 29 REPS= 3 SITE DESC = CONFLUENCE COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
RHAGIONIDAE				
ATHERIX VARIEGATA				
LARVAE	20	39		19.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE		39	20	19.67

2.4.5.751

APPENDIX E-12-2 (Continued)

SITE = 30 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20	59	39	39.33
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
IMMATURES W/O CAP. CHAETAE SP	137	59		65.33
NAIDIDAE				
NAIS BEHNINGI	20	332	137	163.00
LUMBRICULIDA				
LUMBRICULIDAE				
UNIDENTIFIED		20		6.67
ARTHROPODA				
ARACHNOIDEA				
ACARI	20	78	39	45.67
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	59	195	20	91.33
BAETIS SP				
LARVAE	20			6.67
HEPTAGENIIDAE				
HEPTAGENIA SP				
LARVAE	78	39	20	45.67
RHITHROGENA SP				
LARVAE	20	78	59	52.33

APPENDIX E-12-2 (Continued)

SITE = 30 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE	20			6.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	858	1131	1151	1046.67
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	137	234	176	182.33
PLECOPTERA				
UNIDENTIFIED				
LARVAE	156	59		71.67
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA SP				
LARVAE	20			6.67
TRICHOPTERA				
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	137	117	59	104.33
HYDROPSYCHE SP				
LARVAE	507	761	312	526.67
CHEUMATOPSYCHE SP				
LARVAE	39	59	39	45.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	137	98	117	117.33

SITE = 30 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS SP				
LARVAE		59	20	26.33
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	39	39	59	45.67
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	59	156	39	84.67
DIAMESINAE				
ODONTOMESA SP				
LARVAE			20	6.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	20	78	117	71.67
ACRICOTOPUS SP				
LARVAE		20		6.67
CRICOTOPUS CRICOTOPUS				
LARVAE	117	39		52.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE			20	6.67
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20	39	20	26.33

APPENDIX E-12-2 (Continued)

SITE = 30 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
EUKIEFFERIELLA SP				
LARVAE		98		32.67
ORTHOCLADIUS SP				
LARVAE	137	215	332	228.00
PARAKIEFFERIELLA SP				
LARVAE			20	6.67
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE			20	6.67
MICROTENDIPES SP				
LARVAE	59	293	332	228.00
POLYPEDILUM TRIPODURA GRP.				
LARVAE		20	20	13.33
MICROPSECTRA SP				
LARVAE	20			6.67
RHEOTANYTARSUS SP				
LARVAE		156	20	58.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE		20		6.67

2.4.5.755

APPENDIX E-12-2 (Continued)

SITE = 30 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
EMPIDIDAE				
CLINOCERA SP				
LARVAE	20			6.67

2.4.5.756

APPENDIX E-12-2 (Continued)

SITE = 31 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20	20		13.33
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
IMMATURES W/O CAP. CHAETAE SP				
--------- - - --- ------- --			20	6.67
NAIDIDAE				
NAIS SP				
---- --	20	98	59	59.00
NAIS BEHNINGI				
---- --------	98	215	98	137.00
ARTHROPODA				
ARACHNOIDEA				
ACARI			20	6.67
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	273	234	332	279.67
BAETIS SP				
------ --				
LARVAE	312	39	59	136.67
HEPTAGENIIDAE				
HEPTAGENIA SP				
---------- --				
LARVAE	39	20	20	26.33
RHITHROGENA SP				
---------- --				
LARVAE	663	371	566	533.33

APPENDIX E-12-2 (Continued)

SITE = 31 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	2828	2223	975	2008.67
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	195	156	117	156.00
PLECOPTERA				
UNIDENTIFIED				
LARVAE	273	273	39	195.00
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	39	78		39.00
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	117	429	293	279.67
HYDROPSYCHE SP				
LARVAE	1151	1131	897	1059.67
CHEUMATOPSYCHE SP				
LARVAE	59	20		26.33
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	20			6.67
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	39	20	20	26.33

APPENDIX E-12-2 (Continued)

SITE = 31 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	215	20	59	98.00
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	59	137	78	91.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	20	78	195	97.67
CRICOTOPUS SP				
LARVAE		20	20	13.33
CRICOTOPUS CRICOTOPUS				
LARVAE		78		26.00
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	39	59	137	78.33
EUKIEFFERIELLA SP				
LARVAE	39	117	117	91.00
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	59	20		26.33
ORTHOCLADIUS SP				
LARVAE	839	702	624	721.67

2.4.5.759

APPENDIX E-12-2 (Continued)

SITE = 31 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
PARAKIEFFERIELLA SP				
LARVAE			20	6.67
PARAPHAENOCLADIUS SP				
LARVAE	20			6.67
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE		20		6.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE	39	20		19.67

APPENDIX E-12-2 (Continued)

SITE = 32 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
ENCHYTRAEIDAE			20	6.67
TUBIFICIDAE				
LIMNODRILUS HOFFMEISTERI				
TYPICAL		20		6.67
IMMATURES W/O CAP. CHAETAE SP	117	176	98	130.33
NAIDIDAE				
NAIS SP	98	176	195	156.33
NAIS BEHNINGI	624	878	156	552.67
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	78	78	78	78.00
BAETIS SP				
LARVAE	59	98	39	65.33
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE		20	98	39.33
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE		20		6.67

APPENDIX E-12-2 (Continued)

SITE = 32 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
LEPTOPHLEBIIDAE				
CHOROTERPES SP				
LARVAE	39	20		19.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	488	351	215	351.33
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	78	39	78	65.00
PLECOPTERA				
UNIDENTIFIED				
LARVAE		20		6.67
TRICHOPTERA				
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE		59		19.67
HYDROPSYCHE SP				
LARVAE	137	176	176	163.00
CHEUMATOPSYCHE SP				
LARVAE	20			6.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	78	39	59	58.67
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	117	59	137	104.33

APPENDIX E-12-2 (Continued)

SITE = 32 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE			20	6.67
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	98	195	78	123.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	20	20	273	104.33
CRICOTOPUS CRICOTOPUS				
LARVAE		195		65.00
CRICOTOPUS CRICOTOPUS BICINCTUS				
LARVAE	20	20	137	59.00
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20	59	20	33.00
EUKIEFFERIELLA SP				
LARVAE		39		13.00
ORTHOCLADIUS SP				
LARVAE	371	702	351	474.67
PARAKIEFFERIELLA SP				
LARVAE		59	39	32.67

APPENDIX E-12-2 (Continued)

SITE = 32 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
ORTHOCLADIINAE				
PARAPHAENOCLADIUS SP				
LARVAE	20			6.67
CHIRONOMINAE				
CHIRONOMINI SP				
LARVAE	20			6.67
MICROTENDIPES SP				
LARVAE	59	78	156	97.67
PARACLADOPELMA SP				
LARVAE			20	6.67
POLYPEDILUM SP				
LARVAE	20	78	20	39.33
POLYPEDILUM TRIPUDURA GRP.				
LARVAE		20		6.67
TANYTARSUS SP				
LARVAE			20	6.67
MICROPSECTRA SP				
LARVAE		20		6.67
RHEOTANYTARSUS SP				
LARVAE		20		6.67

APPENDIX E-12-2 (Continued)

SITE = 32 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
EMPIDIDAE				
CLINOCERA SP				
LARVAE			20	6.67

APPENDIX E-12-2 (Continued)

SITE = 33 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20	39		19.67
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
IMMATURES W/O CAP. CHAETAE SP	156		20	58.67
NAIDIDAE				
NAIS SP	20			6.67
NAIS BEHNINGI	117	176		97.67
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	137	98	59	98.00
BAETIS SP				
LARVAE	59	78	39	58.67
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE	98	683	156	312.33
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	605	1151	780	845.33
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	78	156	98	110.67

APPENDIX E-12-2 (Continued)

SITE = 33 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
PLECOPTERA				
UNIDENTIFIED				
LARVAE	78	176	59	104.33
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	39	20	20	26.33
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	39			13.00
HYDROPSYCHE SP				
LARVAE	117	78	156	117.00
CHEUMATOPSYCHE SP				
LARVAE	39	20		19.67
HYDROPTILIDAE				
UNIDENTIFIED				
LARVAE	20	20		13.33
LEPTOCERIDAE				
OECETIS SP				
LARVAE	20			6.67
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	59		20	26.33
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	98	195	98	130.33

SITE = 33 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	254	78	20	117.33
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE		20		6.67
CRICOTOPUS SP				
LARVAE		20		6.67
CRICOTOPUS CRICOTOPUS				
LARVAE		20		6.67
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	39	20	59	39.33
EUKIEFFERIELLA SP				
LARVAE	98	78	137	104.33
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	137	78	39	84.67
ORTHOCLADIUS SP				
LARVAE	780	644	761	728.33
PARAKIEFFERIELLA SP				
LARVAE		20		6.67

APPENDIX E-12-2 (Continued)

SITE = 33 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
MICROTENDIPES SP				
LARVAE			20	6.67
PHAENOPSECTRA PHAENOPSECTRA				
LARVAE	20			6.67
POLYPEDILUM SP				
LARVAE	20			6.67
POLYPEDILUM TRIPODURA GRP.				
LARVAE	20		20	13.33
RHEOTANYTARSUS SP				
LARVAE		20		6.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE		20		6.67

2.4.5.769

APPENDIX E-12-2 (Continued)

SITE = 34 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	20	20		13.33
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
NAIDIDAE				
NAIS SP				
---- --		20	20	13.33
NAIS BEHNINGI				
---- --------	20	98	20	46.00
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				

LARVAE	20	20	20	20.00
BAETIS SP				
------ --				
LARVAE		39	20	19.67
HEPTAGENIIDAE				
RHITHROGENA SP				
---------- --				
LARVAE	3647	2262	2847	2918.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
---------- --				
LARVAE	644	332	644	540.00
TRICORYTHIDAE				
TRICORYTHODES SP				
---------- --				
LARVAE	20			6.67
PLECOPTERA				
UNIDENTIFIED				

LARVAE	254	156	137	182.33

APPENDIX E-12-2 (Continued)

SITE = 34 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
PLECOPTERA				
SYSTELLOGNATHA				
PERLODIDAE				
ISOGENUS SP				
LARVAE	98			32.67
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	39		98	45.67
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	156	59	20	78.33
HYDROPSYCHE SP				
LARVAE	1365	176	195	578.67
CHEUMATOPSYCHE SP				
LARVAE	59			19.67
LEPTOCERIDAE				
OECETIS SP				
LARVAE			20	6.67
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE	20			6.67
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	137	39	117	97.67
CERATOPOGONIDAE				
UNIDENTIFIED				
LARVAE			39	13.00

2.4.5.771

APPENDIX E-12-2 (Continued)

SITE = 34 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE			20	6.67
ORTHOCLADIINAE				
UNIDENTIFIED				
LARVAE	20		20	13.33
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20		20	13.33
EUKIEFFERIELLA SP				
LARVAE	98	39	39	58.67
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	20			6.67
ORTHOCLADIUS EUORTHOCLADIUS SP. 17				
LARVAE	39			13.00
ORTHOCLADIUS SP				
LARVAE	59	59		39.33
ORTHOCLADIINAE SP. 1				
LARVAE		39	234	91.00
ORTHOCLADIINAE SP. 4				
LARVAE		39		13.00

APPENDIX E-12-2 (Continued)

SITE = 34 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED- 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
CRYPTOCHIRONOMUS SP				
LARVAE		20		6.67
POLYPEDILUM TRIPODURA GRP.				
LARVAE	20			6.67
CLADOTANYTARSUS SP				
LARVAE		39	20	19.67
RHAGIONIDAE				
ATHERIX VARIEGATA				
LARVAE	20		20	13.33

SITE = 35 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
NEMATODA	39			13.00
ANNELIDA				
OLIGOCHAETA				
HAPLOTAXIDA				
TUBIFICIDAE				
IMMATURES W/O CAP. CHAETAE SP	59	20	20	33.00
NAIDIDAE				
NAIS SP			195	65.00
NAIS BEHNINGI	117	137		84.67
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
BAETIDAE				
UNIDENTIFIED				
LARVAE	351	312	195	286.00
BAETIS SP				
LARVAE	156	195	78	143.00
HEPTAGENIIDAE				
RHITHROGENA SP				
LARVAE	1365	995	527	962.33
LEPTOPHLEBIIDAE				
TRAVERELLA ALBERTANA				
LARVAE			20	6.67
EPHEMERELLIDAE				
EPHEMERELLA SP				
LARVAE	3023	2925	1677	2541.67

SITE = 35 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
EPHEMEROPTERA				
TRICORYTHIDAE				
TRICORYTHODES SP				
LARVAE	59		39	32.67
PLECOPTERA				
UNIDENTIFIED				
LARVAE	234	156	137	175.67
COLEOPTERA				
ELMIDAE				
MICROCYLLOEPUS SP				
LARVAE		20		6.67
TRICHOPTERA				
GLOSSOSOMATIDAE				
UNIDENTIFIED				
LARVAE	156	215	39	136.67
HYDROPSYCHIDAE				
UNIDENTIFIED				
LARVAE	137	39	78	84.67
HYDROPSYCHE SP				
LARVAE	1092	1307	741	1046.67
CHEUMATOPSYCHE SP				
LARVAE		39	20	19.67
LEPIDOPTERA				
PYRALIDAE				
UNIDENTIFIED				
LARVAE			20	6.67
DIPTERA				
TIPULIDAE				
LIMNOPHILA SP				
LARVAE	39	78	59	58.67

APPENDIX E-12-2 (Continued)

SITE = 35 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
UNIDENTIFIED				
PUPAE	59	78	98	78.33
ORTHOCLADIINAE				
CRICOTOPUS CRICOTOPUS				
LARVAE	39		20	19.67
CRICOTOPUS CRICOTOPUS TRIFASCIA				
LARVAE	20	39	39	32.67
EUKIEFFERIELLA SP				
LARVAE	663	585	312	520.00
ORTHOCLADIUS EUORTHOCLADIUS				
LARVAE	156	312	137	201.67
ORTHOCLADIUS EUORTHOCLADIUS SP. 17				
LARVAE			20	6.67
ORTHOCLADIUS SP				
LARVAE	398	358	600	462.00
ORTHOCLADIINAE SP. 4				
LARVAE		39	20	19.67
CHIRONOMINAE				
POLYPEDILUM SP				
LARVAE		20		6.67

2.4.5.776

APPENDIX E-12-2 (Continued)

SITE = 35 REPS= 3 SITE DESC = LOWER WHITE RIVER COLLECTION METHOD = TALL CIRCLE SURBER CONVERSION FACTOR APPLIED= 19.5

TAXON	REP A	REP B	REP C	MEAN
ARTHROPODA				
INSECTA				
DIPTERA				
CHIRONOMIDAE				
CHIRONOMINAE				
POLYPEDILUM TRIPODURA GRP.				
LARVAE	20			6.67
SIMULIIDAE				
UNIDENTIFIED				
LARVAE	20		39	19.67
RHAGIONIDAE				
ATHERIX VARIEGATA				
LARVAE	20			6.67
EMPIDIDAE				
CLINOCERA SP				
LARVAE	20			6.67

2.4.5.777

RBOSP PROGRESS REPORT

APPENDIX E-13-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

APPENDIX E-13-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

Platyhelminthes
  Turbellaria
    Tricladida

Nematoda

Mollusca
  Gastropoda
    Basommatophora
      Lymnaeidae
        Lymnaea sp.
      Physidae
        Physa sp.

Annelida
  Hirudinea
    Rhynchobdellida
      Glossiphoniidae
        Helobdella stagnalis
  Oligochaeta

Arthropoda
  Arachnoidea
    Acari
  Crustacea
    Amphipoda
      Talitridae
        Hyalalla azteca
  Insecta
    Collembola
    Ephemeroptera
      Baetidae
        Baetis sp.
        Callibaetis sp.
      Heptageniidae
        Epeorus sp.
        Heptagenia sp.
        Rhithrogena sp.
      Leptophlebiidae
        Choroterpes sp.
      Ephemerellidae
        Ephemerella sp.
      Tricorythidae

- *Tricorythodes* sp.
- Caenidae
  - *Caenis* sp.

Odonata
- Zygoptera
  - Coenagrionidae
    - *Amphiagrion abbreviatum*
    - *Enallagma* sp.
- Plecoptera
  - Euholognatha
    - Nemouridae
      - *Nemoura* sp.
    - Capniidae
      - *Capnia* sp.
  - Systellognatha
    - Perlodidae
      - *Isogenus* sp.
      - *Isoperla* sp.
- Hemiptera
  - Corixidae
    - *Cenocorixa* sp.
    - *Corisella tarsalis*
    - *Hesperocorixa* sp.
- Coleoptera
  - Dytiscidae
    - *Deronectes* sp.
  - Hydrophilidae
    - *Cymbiodyta* sp.
  - Dryopidae
    - *Helichus* sp.
  - Elmidae
    - *Dubiraphia* sp.
    - *Microcylloepus* sp.
    - *Optioservus* sp.
    - *Zaitzevia* sp.
- Trichoptera
  - Glossosmatidae
  - Hydropsychidae
    - *Hydropsyche* sp.
  - Hydroptilidae
    - *Hydroptila* sp.
  - Lepidostomatidae
    - *Lepidostoma* sp.
  - Limnephilidae
    - *Grammotaulius* sp.
    - *Hesperophylax* sp.

- Leptoceridae
  - *Oecetis* sp.
- Lepidoptera
  - Pyralidae
- Diptera
  - Tipulidae
    - *Dicranota* sp.
    - *Ormosia* sp.
    - *Limnophila* sp.
    - *Holorusia* sp.
  - Psychodidae
    - *Pericoma* sp.
  - Thaumaleidae
  - Ceratopogonidae
  - Chironomidae
  - Simuliidae
    - *Simulium* sp.
  - Stratiomyidae
    - *Euparyphus* sp.
  - Tabanidae
    - *Chrysops* sp.
    - *Tabanus* sp.
  - Rhagionidae
    - *Atherix variegata*
  - Empididae
    - *Clinocera* sp.
  - Ephydridae
  - Anthomyiidae
    - *Limnophora aequifrons*
    - *Limnophora discreta*

RBOSP PROGRESS REPORT

APPENDIX E-13-2

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-13-2

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975[1]
(Data are expressed as organisms/m^2, except where indicated otherwise.)

	Stations											
	1			2			3			4		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:[2]	ES			ES			ES			ES		
Tricladida	996	977	706									
Nematoda	72		109	36	36					91	36	18
Lymnaea sp.												
Physa sp.												
Helobdella stagnalis												
Oligochaeta	272	380	977	145	434	724	652	163	1231	127	109	36
Acari												
Hyalella azteca												
Collembola		18	18									
Baetidae	1231	145	977	760	833	2787	72	272	181	3367	2281	1177
Baetis sp.	54			72	91	199		36	18	72		
Callibaetis sp.												
Epeorus sp.	18											
Heptagenia sp.												
Rhithrogena sp.												
Leptophlebiidae												
Choroterpes sp.												
Ephemerella sp.												
Tricorythodes sp.												
Caenis sp.												
Coenagrionidae												
Amphiagrion abbreviatum												
Enallagma sp.												
Plecoptera	5466	1629	4163	471	1014	3837				199	109	344
Nemoura sp.	4181	1104	1177		18							

[1] Stations 6, 10 - 12 and 16 were dry at the time of sampling.

[2] Sampling Method: ES = Elliptical Modified Surber; ED = Ekman Dredge; TS = Tall Modified Surber

RBOSP PROGRESS REPORT

APPENDIX E-13-2 (Continued)

	Stations											
	1			2			3			4		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Capnia sp.	724	1231	1231	18	54	199					36	199
Isogenus sp.												
Isoperla sp.												
Cenocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera												
Dytiscidae												18
Deronectes sp.												
Cymbiodyta sp.									18			
Helichus sp.												
Elmidae												
Dubiraphia sp.												
Microcylloepus sp.												
Optioservus sp.												
Zaitzevia sp.												
Trichoptera												
Glossosomatidae												
Hydropsychidae												
Hydropsyche sp.												
Hydroptilidae												
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae	163	326	199	326	326	72						
Grammotaulius sp.												
Hesperophylax sp.	36	127	54	18					18			
Oecetis sp.												
Pyralidae												
Diptera												

APPENDIX E-13-2 (Continued)

	Stations											
	1			2			3			4		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Tipulidae	72	109		18	72	525				36		
Dicranota sp.	507	272	253	91	253	887	18			36		18
Ormosia sp.	217	127	36									
Limnophila sp.												
Holorusia sp.	543	615	597	163	326	344	145	54	54	127	54	217
Pericoma sp.	72	54	18		18	54		18	36			
Thaumaleidae												
Ceratopogonidae	2335	2534	1177		72	18	91	54	54	18		
Chironomidae	72	91		1665	4616	3656	905	2063	3602	1864	1720	1720
Simuliidae									18	235	833	778
Simulium sp.											18	
Euparyphus sp.	91		18					18			18	
Chrysops sp.												
Tabanus sp.	18											
Atherix variegata												
Empididae					36							
Clinocera sp.												
Ephydridae												
Limnophora aequifrons	91	109	72	91	181	127				54	36	127
Limnophora discreta									18			

APPENDIX E-13-2 (Continued)

	Stations											
	5			7			8			9		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Tricladida												
Nematoda	18		54	36				36	36			
Lymnaea sp.												
Physa sp.	54											
Helobdella stagnalis	36											
Oligochaeta	9249	1575	724	109	72	36	1774	2715	2534			18
Acari	109	54	91									
Hyalella azteca	109	181	18									
Collembola										18		
Baetidae				416	1647	634	3530	3656	4670	670	1050	815
Baetis sp.				127			507			18		
Callibaetis sp.	18											
Epeorus sp.							290	145	235			
Heptagenia sp.												
Rhithrogena sp.												
Leptophlebiidae												
Choroterpes sp.												
Ephemerella sp.												
Tricorythodes sp.												
Caenis sp.												
Coenagrionidae		36										
Amphiagrion abbreviatum												
Enallagma sp.												
Plecoptera	18	18	18	91	109	36	7475	5340	6353	145	91	91
Nemoura sp.							18					

APPENDIX E-13-2 (Continued)

	Stations											
	5			7			8			9		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Capnia sp.		18			36	36	2027	4000	5340			
Isogenus sp.												
Isoperla sp.								91	36			
Cenocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera	18											
Dytiscidae							72	18	72			
Deronectes sp.	18											
Cymbiodyta sp.												
Helichus sp.												
Elmidae												
Dubiraphia sp.												
Microcylloepus sp.												
Optioservus sp.												
Zaitzevia sp.												
Trichoptera	36	181										
Glossosomatidae												
Hydropsychidae		18										
Hydropsyche sp.												
Hydroptilidae												
Hydroptila sp.	181	434	54					18				
Lepidostoma sp.												
Limnephilidae												
Grammotaulius sp.												
Hesperophylax sp.												
Oecetis sp.												
Pyralidae												
Diptera				18								

APPENDIX E-13-2 (Continued)

	Stations											
	5			7			8			9		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Tipulidae												
Dicranota sp.	36						54	36	36			
Ormosia sp.	18											
Limnophila sp.												
Holorusia sp.	145	199	36		18	18	326	308	579			18
Pericoma sp.												
Thaumaleidae												
Ceratopogonidae	1557	507	362		18		18					
Chironomidae	7874	6444	1249	272	796	181	1068	1792	2100	923	453	1014
Simuliidae	2860	3801	380	145	290	127	18	36	72	163	235	181
Simulium sp.	36	18										
Euparyphus sp.	36				18				18			
Chrysops sp.												
Tabanus sp.												18
Atherix variegata												
Empididae				18	36		18		145	36		
Clinocera sp.												
Ephydridae												
Limnophora aequifrons	18			18	91		127	199	72	18	36	
Limnophora discreta			18				18		18			

APPENDIX E-13-2 (Continued)

	Stations											
	13			14			15			17		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ED			ES			ES	
Tricladida												
Nematoda		36		258	172	43						
Lymnaea sp.												
Physa sp.												
Helobdella stagnalis												
Oligochaeta	2516	1466	1032	2541	9689	17525	1104	2661	525	145	54	18
Acari												
Hyalella azteca												
Collembola												
Baetidae	597	923	941	43	215	2885						
Baetis sp.	471				43							
Callibaetis sp.				86		1593						
Epeorus sp.												
Heptagenia sp.												
Rhithrogena sp.												
Leptophlebiidae												
Choroterpes sp.												
Ephemerella sp.												
Tricorythodes sp.												
Caenis sp.												
Coenagrionidae				431								
Amphiagrion abbreviatum						43						
Enallagma sp.												
Plecoptera	471	199	507		43					18		
Nemoura sp.												

APPENDIX E-13-2 (Continued)

	Stations											
	13			14			15			17		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ED			ES			ES	
Capnia sp.		18	36									
Isogenus sp.												
Isoperla sp.	1104	109	905		43							
Cenocorixa sp.				43								
Corisella tarsalis				43								
Hesperocorixa sp.						43						
Coleoptera												
Dytiscidae												
Deronectes sp.						129			36			
Cymbiodyta sp.												
Helichus sp.												
Elmidae												
Dubiraphia sp.												
Microcylloepus sp.												
Optioservus sp.			18									
Zaitzevia sp.												
Trichoptera												
Glossosomatidae												
Hydropsychidae												
Hydropsyche sp.												
Hydroptilidae												
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae							18	36				
Grammotaulius sp.				43								
Hesperophylax sp.												
Oecetis sp.												
Pyralidae												
Diptera				43		43	18	18		54	36	

APPENDIX E-13-2 (Continued)

	Stations											
	13			14			15			17		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ED			ES			ES	
Taxa												
Tipulidae					43							
Dicranota sp.											54	54
Ormosia sp.												
Limnophila sp.												
Holorusia sp.	326	91	181									
Pericoma sp.							18	36		54	145	18
Thaumaleidae												
Ceratopogonidae	18		36	258	215	172	54	453	127	344	272	36
Chironomidae	4199	3548	3095	35525	35525	10550	1195	1303	2009	3765	6353	4597
Simuliidae		36	36									
Simulium sp.												
Euparyphus sp.	36	18										
Chrysops sp.											18	
Tabanus sp.												
Atherix variegata												
Empididae	36				43	43				18	72	36
Clinocera sp.												
Ephydridae												
Limnophora aequifrons	163	109	127									
Limnophora discreta												

APPENDIX E-13-2 (Continued)

	Stations											
	18			19			20			21		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Tricladida												
Nematoda				362	127	18						
Lymnaea sp.				579	199	18						
Physa sp.												
Helobdella stagnalis				54								
Oligochaeta	235	253	18	4833	72	109	36	217		72	54	
Acari				2407	3674	2824						
Hyalella azteca				2063	977	54						
Collembola												
Baetidae	18				54	54		18				
Baetis sp.											54	
Callibaetis sp.												
Epeorus sp.												
Heptagenia sp.												
Rhithrogena sp.												
Leptophlebiidae												
Choroterpes sp.												
Ephemerella sp.												
Tricorythodes sp.					18							
Caenis sp.				579	145	18						
Coenagrionidae				326	163	18			36		36	
Amphiagrion abbreviatum												
Enallagma sp.					36							
Plecoptera												
Nemoura sp.												

APPENDIX E-13-2 (Continued)

	Stations											
	18			19			20			21		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Capnia sp.												
Isogenus sp.												
Isoperla sp.												
Cenocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera												
Dytiscidae												
Deronectes sp.				199	36	36					18	
Cymbiodyta sp.												
Helichus sp.												
Elmidae				163	109	36						
Dubiraphia sp.												
Microcylloepus sp.												
Optioservus sp.					36	36						
Zaitzevia sp.												
Trichoptera				2371	1122	652						
Glossosomatidae												
Hydropsychidae												
Hydropsyche sp.												
Hydroptilidae				253	362	362						
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae				54	18							
Grammotaulius sp.												
Hesperophylax sp.												
Oecetis sp.												
Pyralidae												
Diptera												

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APPENDIX E-13-2 (Continued)

	Stations											
	18			19			20			21		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			ES			ES			ES	
Tipulidae												
Dicranota sp.												
Ormosia sp.				54		18						
Limnophila sp.												
Holorusia sp.												
Pericoma sp.												
Thaumaleidae				18								
Ceratopogonidae										18	163	
Chironomidae	17430	15059	6444	62626	44255	22535	778	1557	434	1502	1394	1177
Simuliidae				84400	78464	52273				507	670	362
Simulium sp.				326	127	290					18	
Euparyphus sp.					18							
Chrysops sp.												
Tabanus sp.		18					18					
Atherix variegata					18							
Empididae												
Clinocera sp.												
Ephydridae	18											
Limnophora aequifrons												
Limnophora discreta												

APPENDIX E-13-2 (Continued)

	Stations											
	22			23			24			25		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			TS			TS			D-Frame[1]	
Tricladida												
Nematoda						20	20		78		2	2
Lymnaea sp.												
Physa sp.												
Helobdella stagnalis												
Oligochaeta	91	145	54	39	59	137	137		137	1	2	
Acari					20							
Hyalella azteca												
Collembola												
Baetidae				176	215	819	3042	780	1443	15	11	19
Baetis sp.				39		20						2
Callibaetis sp.												
Epeorus sp.												
Heptagenia sp.						20				20	9	4
Rhithrogena sp.				137	78		59	59	410	8	7	14
Leptophlebiidae												
Choroterpes sp.						20						
Ephemerella sp.				624	507	1931	2360	468	2418	95	44	60
Tricorythodes sp.					59	117	39		117	3	1	
Caenis sp.												
Coenagrionidae												
Amphiagrion abbreviatum												
Enallagma sp.												
Plecoptera				312	234	176	215	59	566	18	9	21
Nemoura sp.												

[1]Data are expressed as organisms/sample.

APPENDIX E-13-2 (Continued)

	Stations											
	22			23			24			25		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			TS			TS			D-Frame	
Capnia sp.												
Isogenus sp.												
Isoperla sp.												
Cĕnocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera												
Dytiscidae												
Deronectes sp.												
Cymbiodyta sp.												
Helichus sp.												
Elmidae												
Dubiraphia sp.												
Microcylloepus sp.									20			1
Optioservus sp.												
Zaitzevia sp.												
Trichoptera												
Glossosomatidae							59					
Hydropsychidae				20		20	176		293	11	9	8
Hydropsyche sp.				273	137	78	819	234	293	34	35	30
Hydroptilidae				20						2	3	2
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae												
Grammotaulius sp.												
Hesperophylax sp.												
Oecetis sp.							20			2		1
Pyralidae							78	20	59	1	1	2
Diptera												

APPENDIX E-13-2 (Continued)

	Stations											
	22			23			24			25		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		ES			TS			TS			D-Frame	
Tipulidae												
Dicranota sp.												
Ormosia sp.												
Limnophila sp.				117	59		59	98	39	3	4	
Holorusia sp.												
Pericoma sp.												
Thaumaleidae												
Ceratopogonidae	54	18	18									
Chironomidae	416	145	525	800	878	1619	1775	741	1638	35	33	20
Simuliidae			54					20			2	2
Simulium sp.							20					
Euparyphus sp.												
Chrysops sp.												
Tabanus sp.												
Atherix variegata							39		20	1		
Empididae												
Clinocera sp.							39	20	59	1		
Ephydridae												
Limnophora aequifrons												
Limnophora discreta												

APPENDIX E-13-2 (Continued)

	Stations											
	26			27			28			29		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Tricladida												
Nematoda	20	39	39		20						20	39
Lymnaea sp.												
Physa sp.												
Helobdella stagnalis												
Oligochaeta	39	78	20	39	98	137	410	273	583	98	117	156
Acari					20							
Hyalella azteca												
Collembola								39				
Baetidae	780	839	995	2243	585	1521	137	20	78	1365	2262	4310
Baetis sp.												
Callibaetis sp.												
Epeorus sp.												
Heptagenia sp.	59	195			20	254						20
Rhithrogena sp.	117	449	234		98	78			20	156	449	527
Leptophlebiidae												
Choroterpes sp.	20						20					
Ephemerella sp.	1112	1599	1092	566	1053	683	117	39	215	1112	936	1404
Tricorythodes sp.	59	39	39	59	59	137	39		20	20	39	98
Caenis sp.												
Coenagrionidae												20
Amphiagrion abbreviatum												
Enallagma sp.												
Plecoptera	351	527	566	176	624	332	20	39	39	546	507	644
Nemoura sp.												

APPENDIX E-13-2 (Continued)

	Stations											
	26			27			28			29		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Capnia sp.												
Isogenus sp.												
Isoperla sp.												
Cenocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera												
Dytiscidae												
Deronectes sp.										20		
Cymbiodyta sp.												
Helichus sp.												
Elmidae												
Dubiraphia sp.	20											
Microcylloepus sp.	20	39	20		20	20						
Optioservus sp.												
Zaitzevia sp.	20											
Trichoptera												
Glossosomatidae		20										
Hydropsychidae	527	390	234	39	254	78				195	293	98
Hydropsyche sp.	819	1092	1638	546	858	468				1911	1521	546
Hydroptilidae	78	176	20		20	59		20				
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae												
Grammotaulius sp.												
Hesperophylax sp.												
Oecetis sp.	59	59										
Pyralidae		39	20	59	20							
Diptera												

APPENDIX E-13-2 (Continued)

	Stations											
	26			27			28			29		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Tipulidae												
Dicranota sp.												
Ormosia sp.												
Limnophila sp.		98		20	39					20		59
Holorusia sp.												
Pericoma sp.												
Thaumaleidae												
Ceratopogonidae												
Chironomidae	273	1248	449	644	468	780	819	585	683	761	1677	839
Simuliidae		20		20						215	156	156
Simulium sp.												
Euparyphus sp.												
Chrysops sp.												
Tabanus sp.												
Atherix variegata										20		
Empididae												
Clinocera sp.			20									
Ephydridae												
Limnophora aequifrons												
Limnophora discreta												

APPENDIX E-13-2 (Continued)

	Stations											
	30			31			32			33		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Tricladida												
Nematoda		39	20	39	39	20	20	20			20	59
Lymnaea sp.												
Physa sp.												
Helobdella stagnalis												
Oligochaeta	39	234	98	39	20	59	215	293	176		20	39
Acari		20			20							
Hyalella azteca												
Collembola												
Baetidae	429	312	156	1073	351	566	176	78	429	293	429	351
Baetis sp.	20	39					20		20	20		
Callibaetis sp.												
Epeorus sp.												
Heptagenia sp.					20							
Rhithrogena sp.	39	98	59	488	39	156	78	39	78	137	293	117
Leptophlebiidae												
Choroterpes sp.												
Ephemerella sp.	507	917	449	1131	390	371	156	332	332	663	819	1073
Tricorythodes sp.		39	20	78			39	39	20		78	117
Caenis sp.												
Coenagrionidae												
Amphiagrion abbreviatum												
Enallagma sp.												
Plecoptera	137	312	59	410	137	137	59	195	117	254	390	195
Nemoura sp.												

APPENDIX E-13-2 (Continued)

	Stations											
	30			31			32			33		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Capnia sp.												
Isogenus sp.				59								
Isoperla sp.				39								
Cenocorixa sp.												
Corisella tarsalis												
Hesperocorixa sp.												
Coleoptera												
Dytiscidae												
Deronectes sp.												
Cymbiodyta sp.												
Helichus sp.				20								
Elmidae												
Dubiraphia sp.									20			
Microcylloepus sp.		20			20							
Optioservus sp.												
Zaitzevia sp.												
Trichoptera												
Glossosomatidae				20								
Hydropsychidae	39	215	59	468	117	137	78	59	78	20	39	59
Hydropsyche sp.	332	351	215	975	254	332	351	59	293	195	234	234
Hydroptilidae		98	20					78	156			
Hydroptila sp.												
Lepidostoma sp.												
Limnephilidae												
Grammotaulius sp.												
Hesperophylax sp.												
Oecetis sp.			20	20					20			
Pyralidae	20					20				20	20	20
Diptera												

APPENDIX E-13-2 (Continued)

	Stations											
	30			31			32			33		
Replicate:	A	B	C	A	B	C	A	B	C	A	B	C
Sampling Method:		TS			TS			TS			TS	
Tipulidae												
Dicranota sp.												
Ormosia sp.												
Limnophila sp.	39	39	20	78	39	39	20	137	98	117	254	98
Holorusia sp.												
Pericoma sp.												
Thaumaleidae												
Ceratopogonidae								20			20	
Chironomidae	663	2828	1463	585	546	722	995	2379	2145	839	1463	1560
Simuliidae		59		78		20		20	39	20	59	20
Simulium sp.												
Euparyphus sp.												
Chrysops sp.												
Tabanus sp.												
Atherix variegata												
Empididae												
Clinocera sp.												
Ephydridae												
Limnophora aequifrons												
Limnophora discreta												

APPENDIX E-13-2 (Continued)

	Stations					
	34			35		
Replicate:	A	B	C	A	B	C
Sampling Method:		TS				
Tricladida						
Nematoda			39			
Lymnaea sp.						
Physa sp.						
Helobdella stagnalis						
Oligochaeta	20		20	20	59	39
Acari						
Hyalella azteca						
Collembola						
Baetidae	59	20	20	1463	1112	936
Baetis sp.						39
Callibaetis sp.						
Epeorus sp.						
Heptagenia sp.						
Rhithrogena sp.	215	975	1073	722	488	429
Leptophlebiidae						
Choroterpes sp.						
Ephemerella sp.	98	39	156	1190	858	975
Tricorythodes sp.				20	20	
Caenis sp.						
Coenagrionidae						
Amphiagrion abbreviatum						
Enallagma sp.						
Plecoptera	293	702	761	683	607	390
Nemoura sp.						

APPENDIX E-13-2 (Continued)

	Stations					
	34			35		
Replicate:	A	B	C	A	B	C
Sampling Method:		TS			TS	
Capnia sp.			39			
Isogenus sp.					20	59
Isoperla sp.						
Cenocorixa sp.						
Corisella tarsalis						
Hesperocorixa sp.						
Coleoptera						
Dytiscidae						
Deronectes sp.						
Cymbiodyta sp.						
Helichus sp.						
Elmidae						
Dubiraphia sp.						
Microcylloepus sp.						
Optioservus sp.						
Zaitzevia sp.						
Trichoptera						
Glossosomatidae						
Hydropsychidae						59
Hydropsyche sp.	39		20	371	98	351
Hydroptilidae						
Hydroptila sp.						
Lepidostoma sp.				20	20	
Limnephilidae						
Grammotaulius sp.						
Hesperophylax sp.						
Oecetis sp.						
Pyralidae						20
Diptera						

APPENDIX E-13-2 (Continued)

	Stations					
	34			35		
Replicate:	A	B	C	A	B	C
Sampling Method:		TS			TS	
Tipulidae						
Dicranota sp.						
Ormosia sp.						
Limnophila sp.	78	59	137	137	117	215
Holorusia sp.						
Pericoma sp.						
Thaumaleidae						
Ceratopogonidae		20				
Chironomidae		156	234	1677	1560	2282
Simuliidae	20		20	20	20	137
Simulium sp.						
Euparyphus sp.						
Chrysops sp.						
Tabanus sp.						
Atherix variegata					20	
Empididae						
Clinocera sp.						
Ephydridae						
Limnophora aequifrons						
Limnophora discreta						

2.4.6 Sediment Chemistry

2.4.6.1 Objectives

The objectives of the sediment chemistry studies remain unchanged from Progress Report 2. See section 2.4.6.1 of Progress Report 2 for specific objectives.

2.4.6.2 Methods

With the exception of analysis for arsenic which consists of a digestion procedure (EPA, 1973) followed by colorimetric analysis according to APHA (1971), no change in methods has occurred since Progress Report 3. See section 2.4.5.2 and 2.4.6.2 of Progress Reports 2 and 3, respectively, for specific methods used for sediment chemistry studies.

2.4.6.3 Results

Appendices E-14-1 through E-16-1 presents the results of chemical analysis of sediment samples taken during the October 1975 and November - December 1975 sampling periods. A summary of results for selected parameters from those sampling periods are presented below. With the exception of aluminum, concentrations of the selected parameters were similar in the two streams during both sampling periods.

October 1975

Parameter (µg/g)	White River	Yellow Creek
Aluminum	3,600 - 13,300	6,300 - 18,500
Arsenic	3 - 6	3 - 5
Lead	6 - 14	6 - 12
Zinc	25 - 63	26 - 79

November - December 1975

Parameter (µg/g)	White River	Yellow Creek
Aluminum	3,000 - 12,900	4,000 - 6,700
Arsenic	3 - 5	2 - 10
Lead	5 - 14	6 - 10
Zinc	28 - 63	27 - 65

2.4.6 - Sediment Chemistry Data

RBOSP PROGRESS REPORT

APPENDIX E-14-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-14-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]
(Results are expressed in µg/g unless otherwise noted)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
1-A	12200	32	22	26	958	1020	67300	65
1-B	12300	35	24	28	949	1040	67300	66
2-A	11900	23	15	52	906	980	50900	60
2-B	12500	17	17	44	2010	1050	79700	63
3-A	11600	9	16	<20	3070	1040	106000	49
3-B	12700	7	12	32	2910	1000	96100	48
4-A	12000	16	15	20	471	803	42500	52
4-B	12000	14	16	<20	533	767	41000	55
5-A	12100	6	15	<20	455	582	31600	49
5-B	12100	5	15	<20	446	554	32300	51
7-A	11300	13	14	<20	654	760	39500	42
7-B	10700	14	12	<20	635	752	40300	41
8-A	12200	14	16	<20	451	770	36000	48
8-B	11200	15	14	<20	447	712	35400	45
9-A	13400	16	22	<20	527	787	39200	50
9-B	12200	14	19	<20	543	818	41700	48
12-A	11200	29	17	<20	360	828	37800	57
12-B	12000	28	17	<20	324	824	38600	57
13-A	11900	18	14	<20	279	736	36400	52
13-B	11300	18	14	<20	269	718	36300	51
14-A	14600	3	11	<20	952	713	51000	42
14-B	15300	3	10	<20	954	697	50500	47
17-A	11800	2	8	22	171	623	23700	36
17-B	12300	3	8	24	173	620	24200	37

[1]Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling.

APPENDIX E-14-1 (Continued)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
19-A	8200	3	6	38	184	664	19500	26
19-B	8300	3	6	28	185	676	20900	29
20-A	18200	5	12	<20	1610	791	75300	62
20-B	18500	5	12	26	1840	809	74700	62
21-A	7000	5	6	<20	187	590	20200	28
21-B	8600	5	7	20	187	558	21700	29
22-A	6300	4	6	30	180	568	19600	79
22-B	6300	4	6	26	183	530	18300	28
23-A	5400	3	6	26	184	423	15600	28
23-B	5000	3	9	28	184	417	15300	28
24-A	13300	5	9	22	866	623	40100	53
24-B	12100	5	6	28	862	653	39800	51
25-A	3600	4	8	<20	182	609	13200	36
25-B	3900	5	9	<20	192	637	14200	32
26-A	12400	5	11	36	1130	688	52400	57
26-B	12800	6	11	34	1270	706	52100	55
27-A	6900	4	8	22	309	483	21100	34
27-B	6400	4	8	22	319	489	21300	33
28-A	6900	3	6	50	264	456	18200	28
28-B	7000	4	8	260	285	463	19600	31
29-A	10800	5	9	30	779	632	37100	53
29-B	11500	5	12	28	784	627	37400	54
30-A	11100	5	11	74	1890	777	57400	52
30-B	8600	5	10	20	1020	651	37800	46
31-A	3600	6	7	<20	151	773	10000	31
31-B	3800	6	7	<20	146	805	9500	28
32-A	5100	3	8	22	240	440	17700	25
32-B	5500	3	9	<20	255	470	17700	27
33-A	13300	6	14	28	1110	701	53700	63
33-B	11800	5	14	28	1590	776	60200	57

APPENDIX E-14-1 (Continued)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
34-A	7100	4	10	<20	755	560	38900	39
34-B	8300	5	10	<20	827	597	33500	42
35-A	9600	5	10	20	820	633	40200	47
35-B	9600	5	11	<20	875	627	41100	49

RBOSP PROGRESS REPORT

APPENDIX E-15-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS DURING RBOSP AQUATIC BASELINE STUDIES NOVEMBER - DECEMBER 1975

APPENDIX E-15-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS DURING
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER - DECEMBER 1975[1]
(Results are expressed in µg/g unless otherwise noted)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
1-A	11000	30	20	60	2230	1050	84100	110
1-B	10600	29	20	74	2380	978	88000	110
2-A	11300	16	15	66	2930	1140	93800	74
2-B	10900	18	14	54	2690	1120	83400	73
3-A	7900	16	9	44	1050	771	79700	54
3-B	7700	15	10	48	1120	733	72900	52
4-A	10200	13	12	32	714	863	43000	61
4-B	10300	17	12	34	757	845	44600	59
5-A	10100	6	12	650	419	646	30700	58
5-B	10300	7	12	85	403	692	31800	60
7-A	9600	16	13	22	673	725	35700	43
7-B	9900	15	13	<20	654	745	41900	47
8-A	8900	20	14	<20	410	722	32100	45
8-B	8400	17	13	<20	402	700	31300	45
9-A	10000	21	16	<20	586	724	37200	49
9-B	9900	19	19	<20	582	745	39100	48
13-A	9000	14	15	<20	463	696	38500	57
13-B	9400	13	15	20	446	696	36600	64
14-A	9900	2	11	48	299	548	31000	34
14-B	9300	3	12	24	265	544	29900	42
15-A	8900	4	8	<20	320	617	29200	36
15-B	9700	4	9	42	291	588	30200	36
17-A	8300	1	6	<20	163	578	25600	34
17-B	9500	1	7	22	174	578	25400	42

[1] Stations 6, 10 - 12 and 16 were dry at the time of sampling.

APPENDIX E-15-1 (Continued)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
18-A	8500	4	10	22	259	679	25600	37
18-B	8000	5	11	24	251	625	26100	36
19-A	6700	2	6	20	173	663	18600	27
19-B	6300	2	6	22	181	694	19600	27
20-A	4200	5	10	24	167	538	20000	32
20-B	4500	6	9	30	187	556	21100	34
21-A	5000	10	8	28	220	642	24500	65
21-B	5200	8	9	48	247	578	26200	52
22-A	4100	4	7	26	127	680	15600	40
22-B	4000	3	7	<20	122	647	16400	33
23-A	9800	3	8	30	1230	655	47400	50
23-B	9200	4	8	28	1300	644	46500	47
24-A	7300	4	8	24	735	550	37800	42
24-B	7300	4	9	22	696	568	36800	41
25-A	3100	5	6	65	106	720	12700	28
25-B	3000	4	6	65	106	756	11800	31
26-A	8700	3	9	48	618	576	31500	44
26-B	8200	3	10	44	755	599	34800	46
27-A	9400	3	10	26	731	608	30900	46
27-B	8800	4	7	38	719	591	33100	43
28-A	12500	3	14	58	1670	795	57900	63
28-B	12900	3	8	48	1670	760	49100	53
29-A	11600	3	12	44	1120	746	48900	54
29-B	8300	3	9	52	703	610	31000	42
30-A	3100	4	5	40	148	737	10300	30
30-B	3000	3	5	38	134	778	11000	34
31-A	8500	3	8	48	1030	626	39000	43
31-B	7800	3	7	34	753	620	31700	41
32-A	7100	3	8	34	548	608	35500	43
32-B	8700	3	8	42	634	626	33400	41
33-A	8200	4	8	42	825	825	36600	45
33-B	7300	4	7	36	767	767	39300	44

APPENDIX E-15-1 (Continued)

Station Replicate	Aluminum (Al)	Arsenic (As)	Lead (Pb)	Mercury (Hg)(ppb)	Kjeldahl (N)	Total Phosphate (P)	Volatile Solids	Zinc (Zn)
34-A	4300	5	6	36	253	597	14100	29
34-B	3600	3	7	34	248	548	14300	33
35-A	8400	5	8	68	1600	714	53100	51
35-B	9300	4	10	52	1840	730	62000	53

RBOSP PROGRESS REPORT

APPENDIX E-16-1

RESULTS OF SEDIMENT HERBICIDE ANALYSIS DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-16-1

RESULTS OF SEDIMENT HERBICIDE ANALYSIS DURING
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]
(Data are expressed in µg/g)

Station	Tordon 22K	Silvex
1-A	<0.02	<0.02
1-B	<0.02	<0.02
2-A	<0.02	<0.02
2-B	<0.02	<0.02
3-A	<0.05	<0.05
3-B	<0.05	<0.05
4-A	<0.02	<0.02
4-B	<0.02	<0.02
5-A	<0.02	<0.02
5-B	<0.02	<0.02
7-A	<0.02	<0.02
7-B	<0.02	<0.02
8-A	<0.02	<0.02
8-B	<0.02	<0.02
9-A	<0.02	<0.02
9-B	<0.02	<0.02
12-A	<0.02	<0.02
12-B	<0.02	<0.02
13-A	<0.02	<0.02
13-B	<0.02	<0.02
14-A	<0.02	<0.02
14-B	<0.02	<0.02
17-A	<0.02	<0.02
17-B	<0.02	<0.02
19-A	<0.02	<0.02
19-B	<0.02	<0.02
20-A	<0.02	<0.02
20-B	<0.02	<0.02
21-A	<0.02	<0.02
21-B	<0.02	<0.02
22-A	<0.02	<0.02
22-B	<0.02	<0.02
23-A	<0.02	<0.02
23-B	<0.02	<0.02
24-A	<0.02	<0.02
24-B	<0.02	<0.02

[1]Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling.

APPENDIX E-16-1 (Continued)

Station	Tordon 22K	Silvex
25-A	<0.02	<0.02
25-B	<0.02	<0.02
26-A	<0.02	<0.02
26-B	<0.02	<0.02
27-A	<0.02	<0.02
27-B	<0.02	<0.02
28-A	<0.02	<0.02
28-B	<0.02	<0.02
29-A	<0.02	<0.02
29-B	<0.02	<0.02
30-A	<0.02	<0.02
30-B	<0.02	<0.02
31-A	<0.02	<0.02
31-B	<0.02	<0.02
32-A	<0.02	<0.02
32-B	<0.02	<0.02
33-A	<0.02	<0.02
33-B	<0.02	<0.02
34-A	<0.02	<0.02
34-B	<0.02	<0.02
35-A	<0.02	<0.02
35-B	<0.02	<0.02

2.4.7 Macrophytes

2.4.7.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.7.1 of Progress Report 3 for specific objectives.

2.4.7.2 Methods

No change in methods has occurred since Progress Report 2. See section 2.4.7.2 of Progress Report 2 for specific methods.

2.4.7.3 Results

During the October 1975 sampling, aquatic macrophytes were observed at four stations, including Stations 2, 5, 14, and 19. At Station 2, American speedwell (Veronica americana) was found in very low densities. At Station 5, watercress (Rorippa nasturtium-aquaticum) was observed in rank abundance, while the density of shore crowfoot (Ranunculus cymbolaria) was scattered. Horned pondweed (Zannichellia palustris) was found in rank density at Station 14, whereas shore crowfoot was found in very low densities at Station 19.

During the November - December 1975 sampling period, aquatic macrophytes were observed at Station 2 only. At Station 2, the abundance of American speedwell was scattered; it occurred in two patches, one of which measured approximately 0.2 x 0.05 meters and the other approximately 0.2 x 0.03 meters.

2.4.8 - Fish Data

RBOSP PROGRESS REPORT

APPENDIX E-18-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED, WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-18-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED, WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Common Name	Scientific Name	Number Captured
Brown trout	Salmo trutta	1
Mountain whitefish	Prosopium williamsoni	9
Flannelmouth sucker	Catostomus latipinnis	4
Bluehead sucker	Catostomus discobolus	8
Bluehead x Flannelmouth sucker	Catostomus latipinnis x Catostomus discobolus	1
Roundtail chub	Gila robusta	1
Speckled dace	Rhinichthys osculus	70
Fathead minnow	Pimephales promelas	1
Channel catfish	Ictaluras punctatus	1
Mottled sculpin	Cottus bairdi	98

RBOSP PROGRESS REPORT

APPENDIX E-18-2

FISH DATA, WHITE RIVER AND YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-18-2

FISH DATA, WHITE RIVER AND YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Station Replicate	Date	Species	Length (mm)	Weight (gm)
20-1	10-20-75	No fish observed		
20-2	10-20-75	No fish observed		
21-1	10-20-75	No fish observed		
21-2	10-20-75	No fish observed		
22-1	10-20-75	No fish observed		
22-2	10-20-75	No fish observed		
23-1	10-17-75	Mountain whitefish	138	25.5
		Flannelmouth sucker	113	14.2
		Speckled dace	74	3.4
		"	36	0.5
		"	42	0.8
		"	36	0.6
		"	65	2.4
		Mottled sculpin	101	16.8
		"	86	9.3
23-2	10-17-75	Mountain whitefish	138	24.9
		"	120	15.2
		"	133	23.5
		"	123	17.2
		Speckled dace	63	2.7
		"	43	0.8
		"	35	0.4
		Mottled sculpin	92	13.3
24-1	10-14-75	Bluehead sucker	99	9.6
		Mottled sculpin	49	1.5
24-2	10-14-75	Mottled sculpin	91	11.6
		"	47	1.4
		"	56	2.4
		"	83	7.9
		"	79	7.4
25-1	10-14-75	Speckled dace	82	6.5
		Mottled sculpin	89	10.7
		"	55	2.4
		"	88	8.6
		"	83	9.3
		"	80	8.1
		"	80	7.0
25-2	10-14-75	No fish observed		
26-1	10-14-75	Speckled dace	86	6.5
		"	78	4.8
		"	66	3.0
		"	69	3.2

APPENDIX E-18-2 (Continued)

Station Replicate	Date	Species	Length (mm)	Weight (gm)
29-1	10-16-75	Mountain whitefish	146	30.8
		Bluehead sucker	48	1.1
		Speckled dace	41	0.7
		"	40	0.7
		"	41	0.7
		"	35	0.5
		"	33	0.4
		Mottled sculpin	126	
		"	109	23.2
		"	101	16.9
		"	96	15.8
		"	94	14.3
		"	90	11.4
		"	91	13.2
		"	88	11.9
		"	85	9.9
		"	84	8.8
		"	79	7.6
		"	56	2.6
		"	55	2.4
		"	54	2.1
		"	51	1.9
		"	51	1.8
		"	52	1.8
		"	52	2.0
29-2	10-16-75	Brown trout	94	9.6
		Mountain whitefish	141	25.3
		"	125	19.3
		"	120	15.4
		Speckled dace	39	0.5
		"	35	0.5
		"	35	0.3
		"	36	0.4
		"	36	0.4
		"	37	0.5
		"	35	0.3
		"	39	0.5
		"	35	0.3
		Mottled sculpin	108	17.4
		"	98	14.3
		"	89	9.7
		"	87	10.5
30-1	10-13-75	Mottled sculpin	48	1.5

APPENDIX E-18-2 (Continued)

Station Replicate	Date	Species	Length (mm)	Weight (gm)
30-1	10-13-75	Mottled sculpin	54	2.2
		"	89	12.0
30-2	10-13-75	Mottled sculpin	93	12.3
31-1	10-13-75	Speckled dace	82	6.1
		Mottled sculpin	94	12.1
		"	91	11.5
		"	80	7.4
31-2	10-13-75	Speckled dace	81	5.4
		"	69	3.5
		Mottled sculpin	97	14.3
		"	99	14.9
		"	95	13.1
		"	89	11.2
		"	87	9.9
		"	88	11.5
		"	76	6.3
32-1	10-13-75	Bluehead sucker	92	9.5
		Speckled dace	75	4.7
		Mottled sculpin	91	11.3
		"	77	7.4
32-2	10-13-75	Speckled dace	80	5.7
		"	65	3.1
		Mottled sculpin	94	12.5
		"	51	2.0
33-1	10-15-75	No fish observed		
33-2	10-15-75	Flannelmouth sucker	107	11.6
		"	107	12.0
		Fathead minnow	70	4.4
		Mottled sculpin	86	
34-1	10-15-75	Flannelmouth sucker	141	26.5
		Speckled dace	81	6.1
		"	75	4.4
		"	72	3.9
		"	69	3.7
		"	70	3.5
		"	69	3.3
		"	65	2.8
		"	69	3.4
		"	68	3.2
		"	67	3.1
		"	44	0.9
		"	45	0.9
		"	46	1.1
		"	45	0.9
		"	44	0.9

APPENDIX E-18-2 (Continued)

Station Replicate	Date	Species	Length (mm)	Weight (gm)
34-1	10-15-76	Speckled dace	40	0.7
		"	42	0.9
		"	41	0.7
		"	42	0.7
		Mottled sculpin	94	11.7
		"	84	9.1
		"	46	1.5
		"	48	1.5
34-2	10-15-75	Speckled dace	35	0.5
		"	69	3.0
		Mottled sculpin	51	1.2
		"	83	9.2
		"	93	13.5
		"	88	10.2
35-1	10-15-76	Speckled dace	86	7.3
		Mottled sculpin	89	7.8
		"	77	6.6
35-2	10-15-75	Bluehead sucker	94	9.5
		Speckled dace	62	2.7
		"	38	0.7
		Mottled sculpin	83	8.7
		"	86	8.3
		"	82	8.1
		"	87	9.1

RBOSP PROGRESS REPORT

APPENDIX E-18-3

SUMMARY OF STOMACH CONTENT ANALYSES FOR NINETY-SIX MOTTLED SCULPIN DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-18-3

SUMMARY OF STOMACH CONTENT ANALYSES FOR NINETY-SIX MOTTLED SCULPIN DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER, 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Nematoda	3	1
Heptagenia	2	< 1
Rhithrogena	1	< 1
Baetidae	33	25
Traverella albertana	1	< 1
Ephemerella	5	1
Tricorythodes	1	< 1
Plecoptera	14	2
Odonata	1	< 1
Coenagrionidae	1	< 1
Coleoptera	1	< 1
Glossosomatidae	1	< 1
Hydropsychidae	3	< 1
Hydropsyche	78	52
Hydroptilidae	2	< 1
Oecetis	2	< 1
Pyralidae	8	1
Chironomidae	45	16
Simuliidae	2	< 1
Fish	2	< 1

[1] % frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-18-4

SUMMARY OF STOMACH CONTENT ANALYSES FOR THREE FLANNELMOUTH SUCKERS DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-18-4

SUMMARY OF STOMACH CONTENT ANALYSES FOR THREE
FLANNELMOUTH SUCKERS DURING
RBOSP AQUATIC BASLEINE STUDIES, OCTOBER 1975

Food Item	% Frequency of Occurrence [1]	% of Total Food Item[2]
Ephemeroptera	33	13
Baetidae	33	7
Limnophila	33	7
Chironomidae	67	73

[1] % frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs.}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-18-5

SUMMARY OF STOMACH CONTENT ANALYSES FOR FIVE BLUEHEAD SUCKERS DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

APPENDIX E-18-5

SUMMARY OF STOMACH CONTENT ANALYSES FOR FIVE BLUEHEAD SUCKERS DURING RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Algae	80	--

[1] % frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

APPENDIX E-18-6

SUMMARY OF STOMACH CONTENT ANALYSES FOR ONE ROUNDTAIL CHUB DURING OCTOBER 1975

APPENDIX E-18-6

SUMMARY OF STOMACH CONTENT ANALYSES FOR ONE ROUNDTAIL CHUB DURING RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Nematoda	100	7
Baetidae	100	13
Coleoptera	100	13
Chironomidae	100	67

[1] % frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-18-7

SUMMARY OF STOMACH CONTENT ANALYSES FOR EIGHT MOUNTAIN WHITEFISH DURING RBOSP AQUATIC BASELINE STUDIES OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-18-7

SUMMARY OF STOMACH CONTENT ANALYSES FOR EIGHT MOUNTAIN WHITEFISH DURING RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Heptagenia	13	> 1
Rhithrogena	13	> 1
Baetidae	100	40
Ephemerella	13	> 1
Tricorythodes	13	> 1
Hydropsyche	100	13
Hydroptilidae	38	9
Limnophila	13	> 1
Chironomidae	100	34
Simuliidae	13	1

[1] % frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-18-8

RESULTS OF FOOD HABIT ANALYSES FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-18-8

RESULTS OF FOOD HABIT ANALYSES FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975[1]

	Station 23		Date 10-17-75	
	Length	Weight	Food Items	
Species	(mm)	(gm)	#	
Mountain whitefish	138	25.5	4	Chironomidae larvae
			1	Chironomidae pupa
			38	Baetidae nymphs
			2	Hydropsyche larvae
			1	Rhithrogena nymph
Mountain whitefish	138	24.9	16	Chironomidae larvae
			3	Baetidae nymphs
			8	Hydropsyche larvae
			1	Limnophila larva
			1	Hydroptilidae larva
			1	Tricorythodes nymph
Mountain whitefish	120	15.2	7	Chironomidae larvae
			4	Baetidae nymphs
			2	Hydropsyche larvae
Mountain whitefish	133	23.5	30	Chironomidae larvae
			4	Baetidae nymphs
			2	Hydropsyche larvae
			18	Hydroptilidae larvae
Flannelmouth sucker	113	14.2	1	Chironomidae larva
			2	Ephemeroptera nymphs
Mottled sculpin	101	16.8	3	Hydropsyche larvae
			1	Odonata nymph (parts)
Mottled sculpin	86	9.3	10	Chironomidae larvae
			1	Plecoptera nymph
			3	Baetidae nymphs
			6	Hydropsyche larvae
Mottled sculpin	92	13.3	1	Hydropsychidae larva
			18	Hydropsyche larvae
			2	Oecetis larvae

[1] No fish were taken at Stations 20 - 22.

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	Food Items #	
	Station 24		Date 10-14-75	
Bluehead sucker	99	9.6		Algae present
Mottled sculpin	49	1.5	6	Chironomidae larvae
Mottled sculpin	91	11.6	1	Chironomidae larva
			1	Baetidae nymph
			3	Hydropsyche larvae
			1	Pyralidae larva
Mottled sculpin	47	1.4	1	Chironomidae larva
Mottled sculpin	56	2.4	2	Chironomidea larvae
			1	Baetidae nymph
			1	Hydropsyche larva
Mottled sculpin	83	7.9	7	Chironomidae larvae
			1	Baetidae nymph
			1	Hydropsyche larva
Mottled sculpin	79	7.4	1	Chironomidae larva
			3	Hydropsyche larvae
	Station 25		Date 10-14-75	
Mottled sculpin	89	10.7	2	Chironomidae larvae
			19	Hydropsyche larvae
Mottled sculpin	55	2.4		Nothing found
Mottled sculpin	88	8.6	2	Chironomidae larvae
			16	Hydropsyche larvae
Mottled sculpin	83	9.3	18	Hydropsyche larvae
Mottled sculpin	80	8.1	2	Chironomidae larvae
			6	Baetidae nymphs
			17	Hydropsyche larvae
Mottled sculpin	80	7.0	1	Chironomidae larva
			5	Hydropsyche larvae

APPENDIX E-18-8 (Continued)

Station 26 Date 10-14-75

Species	Length (mm)	Weight (gm)	Food Items #	
Mottled sculpin	113	19.3	3	Chironomidae larvae
			3	Plecoptera nymphs
			22	Hydropsyche larvae
			2	Pyralidae larvae
Mottled sculpin	45	1.1		Nothing found
Mottled sculpin	90	11.3	17	Hydropsyche larvae
Mottled sculpin	46	1.3	3	Chironomidae larvae
			2	Ephemerella nymphs
			1	Plecoptera nymph
Mottled sculpin	90	10.6	24	Hydropsyche larvae
Mottled sculpin	81	7.5	2	Chironomidae larvae
			5	Hydropsyche larvae
Mottled sculpin	78	6.6	2	Chironomidae larvae
			5	Hydropsyche larvae
			1	Ephemerella nymph
Mottled sculpin	79	7.4	6	Hydropsyche larvae
Mottled sculpin	87	9.6	1	Chironomidae larva
			5	Hydropsyche larvae
Mottled sculpin	48	1.3	2	Chironomidae larvae
			2	Hydropsyche larvae
			2	Rhithrogena nymph
Mottled sculpin	91	10.3	3	Chironomidae larvae
			1	Plecoptera nymph
			5	Baetidae nymphs
			20	Hydropsyche larvae
			1	Pyralidae larva
			1	Tricorythodes nymph
Mottled sculpin	89	10.0	1	Chironomidae larva
			2	Hydropsyche larvae
			1	Pyralidae larva

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	#	Food Items
Station 26 cont.			**Date 10-14-75**	
Mottled sculpin	81	7.2	4	Hydropsyche larvae
			4	Baetidae nymphs
Mottled sculpin	84	8.3	14	Hydropsyche larvae
			1	Baetidae nymph
			1	Plecoptera nymph
Mottled sculpin	89	9.1	2	Chironomidae larvae
			16	Hydropsyche larvae
			1	Hydroptilidae larva
Mottled sculpin	52	1.7	2	Hydroptilidae larvae
Station 27			**Date 10-16-75**	
Mottled sculpin	90	9.5	1	Hydropsyche larva
Mottled sculpin	91	12.0	13	Hydropsyche larvae
Mottled sculpin	54	2.1	1	Hydropsyche larva
Mottled sculpin	44	1.0	1	Chironomidae larva
Mottled sculpin	51	1.7	1	Hydropsyche larva
			2	Baetidae nymphs
Station 28			**Date 10-16-75**	
Bluehead sucker	79	6.2		Algae present
Mottled sculpin	82	8.4	1	Chironomidae larva
				Fish parts
Mottled sculpin	89	10.8	4	Chironomidae larvae
			1	Hydropsyche larva
			10	Baetidae nymphs
Mottled sculpin	59	3.1	1	Chironomidae larva
			1	Hydropsychidae larva
Mottled sculpin	54	2.2		Nothing found

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	#	Food Items
	Station 28		Date 10-16-75	
Mottled sculpin	53	2.0	4	Chironomidae larvae
Mottled sculpin	50	1.7	2	Chironomidae larvae
			3	Baetidae nymphs
	Station 29		Date 10-16-75	
Mountain whitefish	146	30.8	2	Chironomidae larvae
			7	Baetidae nymphs
			1	Hydropsyche larva
			1	Hydroptilidae larva
Mountain whitefish	141	25.3	4	Chironomidae larvae
			1	Chironomidae pupa
			11	Baetidae nymphs
			3	Hydropsyche larvae
			1	Heptagenia nymph
			1	Ephemerella nymph
Mountain whitefish	125	19.3	6	Chironomidae larvae
			3	Simuliidae larvae
			13	Baetidae nymphs
			4	Hydropsyche larvae
Mountain whitefish	120	15.4	1	Chironomidae larva
			4	Baetidae nymphs
			5	Hydropsyche larvae
Bluehead sucker	48	1.1		Algae present
Mottled sculpin	126	--	2	Fish
			4	Chironomidae larvae
			1	Plecoptera nymph
			29	Baetidae nymphs
			12	Hydropsyche larvae
			1	Glossosomatidae larva
			1	Ephemerella nymph
Mottled sculpin	109	23.2	22	Baetidae nymphs
			6	Hydropsyche larvae

APPENDIX E-18-8 (Continued)

Station 29 (Cont.) Date 10-16-76

Species	Length (mm)	Weight (gm)	#	Food Items
Mottled sculpin	101	16.9	19	Chironomidae larvae
			11	Baetidae nymphs
			8	Hydropsyche larvae
Mottled sculpin	46	15.8	2	Chironomidae larvae
			1	Plecoptera nymph
			3	Hydropsyche larvae
			2	Nematoda
Mottled sculpin	94	14.3	8	Chironomidae larvae
			15	Baetidae nymphs
			1	Hydropsychidae larva
			11	Hydropsyche larvae
Mottled sculpin	90	11.4	1	Simuliidae larva
			1	Hydropsyche larva
Mottled sculpin	91	13.2	8	Hydropsyche larvae
Mottled sculpin	88	11.9	19	Baetidae nymphs
			5	Hydropsyche larvae
Mottled sculpin	85	9.9	17	Baetidae nymphs
			5	Hydropsyche larvae
Mottled sculpin	84	8.8	2	Chironomidae larvae
			8	Baetidae nymphs
			1	Hydropsyche larvae
			1	Plecoptera nymph
			1	Pyralidae larva
Mottled sculpin	79	7.6	7	Chironomidae larvae
			1	Plecoptera nymph
			8	Baetidae nymphs
			2	Hydropsyche larvae
Mottled sculpin	56	2.6	1	Baetidae nymph
			1	Hydropsyche larva
Mottled sculpin	55	2.4	1	Plecoptera nymph
			1	Hydropsyche larva

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	Food Items #	
Station 29 (Cont.) Date 10-16-76				
Mottled sculpin	54	2.1	1	Baetidae nymph
Mottled sculpin	51	1.9		Nothing found
Mottled sculpin	51	1.8	2	Baetidae nymphs
			1	Hydropsyche larva
Mottled sculpin	52	1.8	2	Baetidae nymphs
			1	Hydropsyche larva
			2	Nematoda
Mottled sculpin	52	2.0	6	Baetidae nymphs
Mottled sculpin	108	98.0	13	Chironomidae larvae
			1	Plecoptera nymph
			34	Baetidae nymphs
			9	Hydropsyche larvae
Mottled sculpin	98	14.3	4	Chironomidae larvae
			10	Baetidae nymphs
			5	Hydropsyche larvae
Mottled sculpin	89	9.7	9	Chironomidae larvae
			10	Baetidae nymphs
			5	Hydropsyche larvae
			1	Coleoptera adult (aquatic)
Mottled sculpin	87	10.5	1	Chironomidae larva
			5	Baetidae nymphs
			8	Hydropsyche larvae
Station 30 Date 10-13-75				
Mottled sculpin	54	2.2	3	Chironomidae larvae
			2	Hydropsyche larvae
Mottled sculpin	89	12.0	16	Hydropsyche larvae
Mottled sculpin	93	12.3	4	Hydropsyche larvae

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	Food Items #	
Station 31			**Date 10-13-75**	
Mottled sculpin	94	12.1	8	Chironomidae larvae
			2	Baetidae nymphs
			13	Hydropsyche larvae
			1	Pyralidae larva
Mottled sculpin	91	11.5	1	Chironomidae larva
			3	Hydropsyche larvae
Mottled sculpin	80	7.4	1	Hydropsyche larva
Mollted sculpin	97	14.3	3	Hydropsyche larvae
Mottled sculpin	99	14.9	5	Hydropsyche larvae
Mottled sculpin	95	13.1	19	Hydropsyche larvae
Mottled sculpin	89	11.2	3	Hydropsyche larvae
Mottled sculpin	87	9.9	2	Hydropsyche larvae
			1	Coenagrionidae nymph
Mottled sculpin	88	11.5	10	Hydropsyche larvae
Mottled scúlpin	76	6.3	1	Hydropsyche larva
Station 32			**Date 10-13-75**	
Bluehead sucker	92	9.5		Algae present
Mottled sculpin	91	11.3	2	Chironomidae larvae
			1	Baetidae nymph
			2	Hydropsyche larvae
Mottled sculpin	77	7.4	2	Hydropsyche larvae
Mottled sculpin	91	12.5	7	Hydropsyche larvae
Mottled sculpin	51	2.0		Nothing found

APPENDIX E-18-8 (Continued)

Species	Length (mm)	Weight (gm)	#	Food Items
Station 33			**Date 10-15-75**	
Flannelmouth sucker	107	11.6		Nothing found
Flannelmouth sucker	107	12.0	8	Chironomidae larvae
Mottled sculpin	86	--	2	*Hydropsyche* larvae
Station 34			**Date 10-15-75**	
Flannelmouth sucker	141	26.5	9	Chironomidae larvae
			1	Chironomidae pupa
			1	Baetidae nymph
			1	*Limnophila* larva
Roundtail chub	417	568	1	Nematoda
			2	Coleoptera adults
			2	Baetidae nymphs
			10	Chironomidae pupae
Mottled sculpin	94	11.7	13	*Hydropsyche* larvae
Mottled sculpin	84	9.1	2	Chironomidae larvae
			8	*Hydropsyche* larvae
Mottled sculpin	46	1.5		Nothing found
Mottled sculpin	48	1.5	1	Plecoptera nymph
			1	Nematoda
Mottled sculpin	51	1.2	1	*Ephemerella* nymph
Mottled sculpin	83	9.2	2	*Hydropsyche* larvae
			3	*Oecetis* larvae
Mottled sculpin	93	13.5		Nothing found
Mottled sculpin	88	10.2	4	*Hydropsyche* larvae
Station 35			**Date 10-15-75**	
Bluehead sucker	94	9.5		Nothing found

APPENDIX E-18-8 (Continued)

Station 34 (Cont.) Date 10-15-75

Species	Length (mm)	Weight (gm)	Food Items #	
Mottled sculpin	89	7.8	1	Baetidae nymph
			3	Hydropsyche larvae
			1	Pyralidae larva
Mottled sculpin	77	6.6	1	Chironomidae larvae
			1	Plecoptera nymph
			4	Hydropsyche larvae
			2	Heptagenia nymphs
			2	Ephemerella nymphs
			3	Traverella albertana nymphs
Mottled sculpin	83	8.7	2	Hydropsyche larvae
			2	Baetidae nymphs
Mottled sculpin	86	8.3	4	Hydropsyche larvae
			1	Ephemerella nymph
			1	Pyralidae larva
Mottled sculpin	82	8.1	1	Chironomidae larva
			1	Heptagenia nymph
Mottled sculpin	87	9.1	1	Hydropsyche larva

RBOSP PROGRESS REPORT

APPENDIX E-19-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED, WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

APPENDIX E-19-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED, WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

Common Name	Scientific Name	Number Captured
Mountain whitefish	Prosopium williamsoni	10
Flannelmouth sucker	Catostomus latipinnis	14
Bluehead sucker	Catostomus discobolus	3
Speckled dace	Rhinichthys osculus	19
Fathead minnow	Pimephales promelas	1
Mottled sculpin	Cottus bairdi	9

RBOSP PROGRESS REPORT

APPENDIX E-19-2

FISH DATA, WHITE RIVER AND YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

APPENDIX E-19-2

FISH DATA, WHITE RIVER AND YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975[1]

Station Replicate	Date	Species	Length (mm)	Weight (gm)
23-1	11-24-75	No fish observed		
23-2	11-24-75	No fish observed		
24-1	11-17-75	Mottled sculpin	96	14.2
		"	83	8.4
24-2	11-17-75	No fish observed		
25-1	11-17-75	No fish observed		
25-2	11-17-75	No fish observed		
26-1	11-17-75	No fish observed		
26-2	11-17-75	Speckled dace	44	0.9
		"	38	0.5
		"	37	0.6
		"	36	0.5
		"	41	0.8
		Mottled sculpin	101	15.0
		"	89	11.5
		"	43	1.0
27-1	11-19-75	No fish observed		
27-2	11-19-75	Mountain whitefish	351	41.0
		"	145	4.5
		Flannelmouth sucker	445	75.0
		"	424	68.0
27-qual.	11-19-75	Flannelmouth sucker	455	90.0
28-1	11-19.75	Flannelmouth sucker	426	68.0
		"	450	77.0
		"	495	94.5
28-2	11-19-75	Mountain whitefish	140	23.5
		Flannelmouth sucker	54	1.2
		"	52	1.1
		"	510	116.5
		"	455	84.0
		"	478	88.0
		"	434	75.0
		Bluehead sucker	58	2.0
		Fathead minnow	70	4.1
29-1	11-19-75	Mountain whitefish	145	29.6
		"	127	17.2
		Mottled sculpin	99	15.6
		"	92	13.1
29-2	11-19-75	Mountain whitefish	145	27.9
		"	121	13.4

[1] Stations 20 - 22 were frozen at the time of sampling.

RBOSP PROGRESS REPORT

APPENDIX E-19-3

SUMMARY OF STOMACH ANALYSES FOR SEVEN MOTTLED SCULPIN DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

APPENDIX E-19-3

SUMMARY OF STOMACH ANALYSES FOR SEVEN MOTTLED SCULPIN DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Baetidae	43	69
Ephemerella	14	2
Coenagrionidae	14	2
Coleoptera	14	2
Hydropsyche	71	17
Chironomidae	29	9

[1] % of frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-19-4

SUMMARY OF STOMACH ANALYSES FOR TWELVE FLANNELMOUTH SUCKERS DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-19-4

SUMMARY OF STOMACH ANALYSES FOR TWELVE FLANNELMOUTH SUCKERS DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Nematoda	17	2
Baetidae	50	14
Baetis	17	2
Ephemerella	25	5
Tricorythodes	8	1
Plecoptera	17	2
Corixidae	8	1
Deronectes	8	1
Hydropsychidae	8	1
Hydropsyche	33	13
Limnophila	8	2
Chironomidae	75	53
Simuliidae	17	6

[1] % of frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-19-5

SUMMARY OF STOMACH ANALYSES FOR TWO BLUEHEAD SUCKERS DURING
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-19-5

SUMMARY OF STOMACH ANALYSES FOR TWO BLUEHEAD SUCKERS DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]

Nothing was found in either stomach.

RBOSP PROGRESS REPORT

APPENDIX E-19-6

SUMMARY OF STOMACH ANALYSES FOR EIGHT MOUNTAIN WHITEFISH DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-19-6

SUMMARY OF STOMACH ANALYSES FOR EIGHT MOUNTAIN WHITEFISH DURING RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Nematoda	13	10
Heptagenia	13	> 1
Baetidae	50	7
Ephemerella	25	1
Plecoptera	13	2
Coenagrionidae	13	19
Hydropsychidae	13	3
Hydropsyche	25	19
Hydroptilidae	25	1
Pyralidae	13	> 1
Chironomidae	38	35
Simuliidae	13	2

[1] % of frequency of occurrence = $\frac{\text{\# of stomachs containing a food item}}{\text{total \# of stomachs examined}}$

[2] % of total food items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

RBOSP PROGRESS REPORT

APPENDIX E-19-7

RESULTS OF FOOD HABIT ANALYSES FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-19-7

RESULTS OF FOOD HABIT ANALYSES FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES, NOVEMBER 1975[1]

Species	Length (mm)	Weight (gm)	#	Food Item
Station 24			**Date 11-17-75**	
Mottled sculpin	96	14.2	3	Hydropsyche larvae
			1	Coleoptera adult (aquatic)
Mottled sculpin	83	8.4	4	Chironomidae larvae
			4	Baetidae nymphs
			1	Hydropsyche larva
Station 26			**Date 11-17-75**	
Mottled sculpin	101	15.0	1	Chironomidae larva
			1	Ephemerella nymph
			1	Hydropsyche larva
Station 27			**Date 11-19-75**	
Mountain whitefish	351	410	43	Coenagrionidae nymphs
			9	Chironomidae larvae
			8	Baetidae nymphs
			1	Hydropsyche larva
Flannelmouth sucker	445	750	6	Chironomidae larvae
			3	Baetidae nymphs
Flannelmouth sucker	424	680	5	Chironomidae larvae
			1	Tricorythodes nymph
Flannelmouth sucker	455	900	2	Chironomidae larvae
			1	Chironomidae pupa
			1	Plecoptera nymph
			5	Baetidae nymphs
			1	Hydropsyche larva
Station 28			**Date 11-19-75**	
Mountain whitefish	140	23.5	1	Hydroptilidae larva

[1]No fish were taken at Stations 20 - 23, 25, 30, 33, 35.

APPENDIX E-19-7 (Continued)

Species	Length (mm)	Weight (gm)	#	Food Item
Station 28			**Date 11-19-75**	
Flannelmouth sucker	426	680	1	Chironomidae larva
			2	Ephemerella nymphs
Flannelmouth sucker	450	770		Nothing found
Flannelmouth sucker	495	945	1	Baetis nymph
Flannelmouth sucker	510	1165	34	Chironomidae larvae
			7	Chironomidae pupae
			6	Simuliidae larvae
			5	Baetidae nymphs
			1	Hydropsychidae larva
			1	Hydropsyche larva
			1	Nematoda
			2	Limnophila larvae
			1	Baetis nymph
			1	Corixidae adult
			2	Ephemerella nymphs
Flannelmouth sucker	455	840	2	Chironomidae larvae
			2	Chironomidae pupae
			2	Baetidae nymphs
			1	Hydropsyche larva
			1	Nematoda
Flannelmouth sucker	478	880	2	Baetidae nymphs
			3	Chironomidae larvae
			1	Chironomidae pupa
			1	Simuliidae larva
			13	Hydropsyche larvae
			2	Ephemerella nymphs
Flannelmouth sucker	434	750	1	Chironomidae larva
			1	Plecoptera nymph
			1	Baetidae nymph
			1	Deronectes adult
Station 29			**Date 11-19-75**	
Mountain whitefish	145	29.6	1	Hydroptilidae larva
			1	Ephemerella nymph

APPENDIX E-19-7 (Continued)

Species	Length (mm)	Weight (gm)	#	Food Item
Station 29 (Cont.) Date 11-19-75				
Mountain whitefish	127	17.2	1	Baetidae nymph
Mountain whitefish	145	27.9		Nothing found
Mountain whitefish	121	13.4	2	Chironomidae larvae
Flannelmouth sucker	63	2.2		Nothing found
Bluehead sucker	49	1.1		Nothing found
Mottled sculpin	99	15.6	2	Baetidae nymphs
			2	Hydropsyche larvae
			1	Coenagrionidae nymph
Mottled sculpin	92	13.1	31	Baetidae nymphs
			2	Hydropsyche larvae
Mottled sculpin	51	1.8		Nothing found
Station 31 Date 11-18-75				
Mountain whitefish	345	320	66	Chironomidae larvae
			4	Simuliidae larvae
			4	Plecoptera nymphs
			5	Baetidae nymphs
			6	Hydropsychidae larvae
			42	Hydropsyche larvae
			1	Pyralidae larva
			2	Ephemerella nymphs
			1	Heptagenia nymph
			21	Nematoda
Mountain whitefish	140	23.7	2	Baetidae nymphs
Flannelmouth sucker	407	615	2	Chironomidae larvae
Bluehead sucker	397	660		Nothing found
Station 34 Date 11-20-75				
Mottled sculpin	89	16.9		Nothing found

2.4.9 Springs and Seepages

2.4.9.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.9 of Progress Report 3 for specific objectives.

2.4.9.2 Methods

No change in methods has occurred since Progress Report 3. See section 2.4.9 of Progress Report 3 for specific methods.

2.4.9.3 Results

Approximate locations of springs and seepages on or near Tract C-a are shown on Figure 2.4-2.

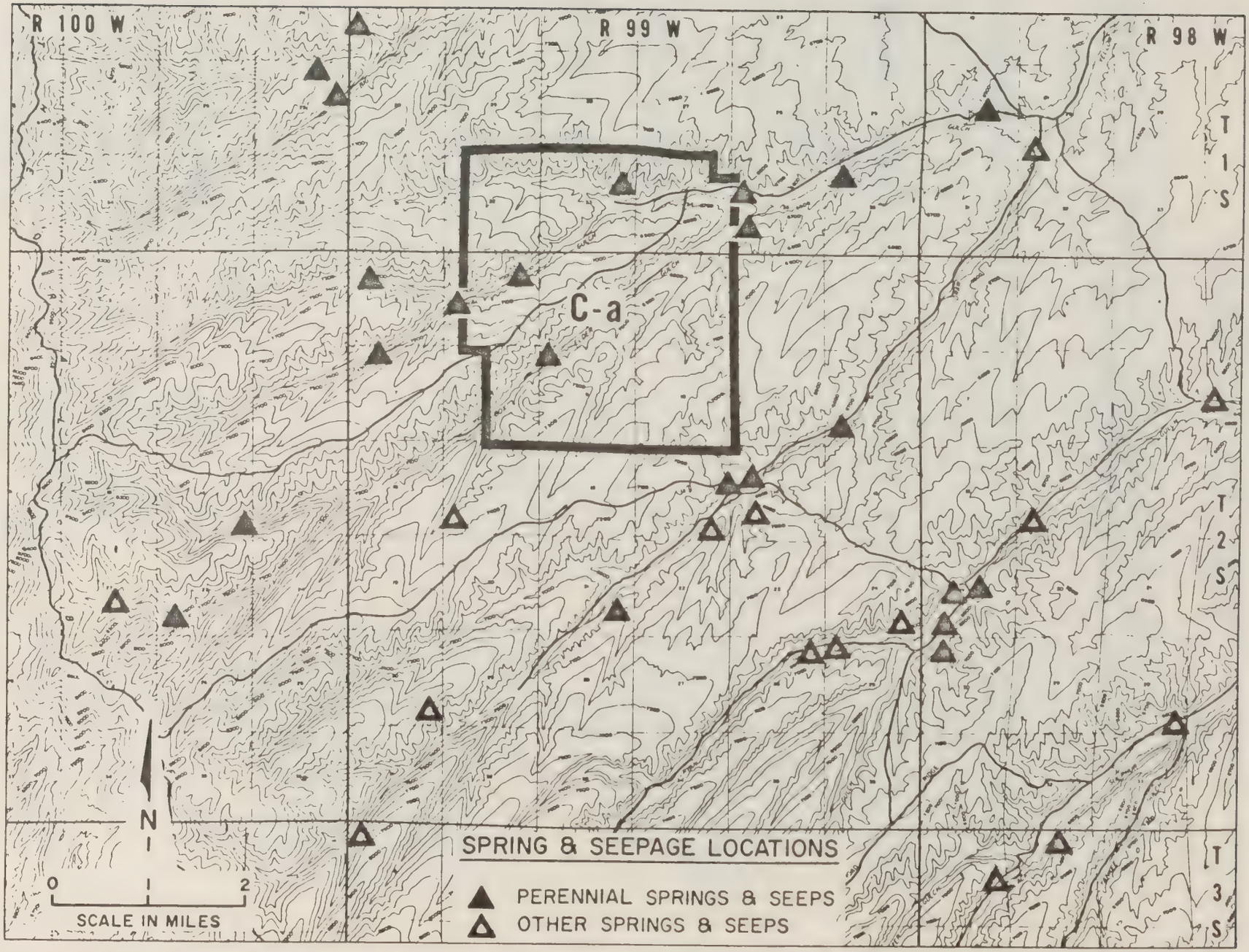

Figure 2.4-2. Spring and Seepage Locations

2.4.10 Hydrology

2.4.10.1 Objectives

The objective of this segment of the aquatic program is to measure the approximate stream velocities at each site at the time of sample collection to assist in characterizing the existing aquatic habitat.

2.4.10.2 Methods

Stream velocity is measured at each sampling site with Gurley flowmeters or an equivalent device.

2.4.10.3 Results

The approximate stream velocities during the October and November - December 1975 sampling periods are presented in Appendices E-20-1 and E-21-1.

2.4.10 - Hydrology Data

RBOSP PROGRESS REPORT

APPENDIX E-20-1

STREAM FLOW
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-20-1

STREAM FLOW,
RBOSP AQUATIC BASELINE STUDIES
OCTOBER, 1975[1]
(Results are expressed in feet per second and, where appropriate, are given for bank sides and point of maximum flow.)

Station	Flow Rate[2]		
	s	m	s
1		0.5	
2		0.9	
3		1.3	
4		1.1	
5		1.2	
7		1.7	
8		1.5	
9		1.6	
12		0.7	
13		1.9	
14		0.4	
17		NM	
19		1.3	
20		1.3	
21		2.0	
22		2.0	
23	1.6;	3.6;	2.0
24	1.5;	1.0	
25	2.2;	1.6;	1.8
26		1.7;	0.8
27	0.2;	0.6;	1.0
28	0.7;	0.9;	0.1
29	4.5;	4.5;	1.8
30	2.7;	2.3;	1.8
31	3.1;	2.9;	2.7
32	1.1;	2.7;	3.1
33	0.8;	1.0;	0.6
34	1.7;	2.5	
35	1.5;	4.5;	2.5

[1] Stations 6, 10, 11, 15, 16 and 18 were dry at the time of sampling.

[2] NM = Not measurable

RBOSP PROGRESS REPORT

APPENDIX E-21-1

STREAM FLOW
RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-21-1

STREAM FLOW, RBOSP AQUATIC BASELINE STUDIES
NOVEMBER - DECEMBER 1975[1]
(Results are expressed in feet per second)

Station	Flow Rate[2] s m s
1	1.0
2	1.0
3	NM[3]
4	1.7
5	0.5
7	0.8
8	0.7
9	1.1
13	1.0
14	0.3
15	0.5
17	0.5
18	0.4
19	0.9
20	0.8
21	1.5
22	1.6
23	2.1;3.2
24	2.6;2.9;1.6
25	3.3;3.9;2.6
26	1.5;2.1;3.3
27	0.7;0.9;0.1
28	0.9;1.2;0.7
29	2.1;1.8;2.1
30	3.3;3.3;1.7
31	3.1;2.6;3.3
32	1.6;1.9;3.1
33	0.8;2.2
34	2.4;2.2
35	0.9;5.3

[1] Stations 6, 10 - 12 and 16 were dry at the time of sampling.

[2] Measurements taken at bank sides (s) and point of maximum flow (m) where appropriate

[3] NM = Not measurable

RBOSP Program

APPENDIX E-22-1

WATER QUALITY DATA SPECTROGRAPHIC ELEMENT SCAN
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

2.4.11 Miscellaneous Studies

2.4.11.1 Objectives

No change in objectives has occurred since Progress Report 3. See section 2.4.11 of Progress Report 3 for specific objectives.

2.4.11.2 Methods

No change in methods has occurred since Progress Report 3. See section 2.4.11 of Progress Report 3 for parameters included in these studies. The frequency of collection of the various parameters included in these investigations and the list of parameters are presented in Table 2.4-3.

2.4.11.3 Results

Data from the October and December 1975 sampling periods are included in Appendices E-22-1 through E-24-1.

Table 2.4-3. List of parameters and sampling frequency for water quality investigations.

Semi-Monthly	Semi-Monthly[1]
Element or Compound	Element or Compound
Barium	Arsenic
Boron	Cadmium
Calcium	Lead
Chromium	Manganese
Cooper	Mercury
Fluoride	Phosphorus
Iron	Cyanide
Lithium	Sulfide
Magnesium	
Potassium	
Selenium	
Silicon	
Sodium	
Sulfate	
Zinc	
Ammonia	
Bicarbonate	
Carbonate	
Chloride	
Color	
Dissolved solids	
Kjeldahl nitrogen	
Nitrate	
Nitrite	
Odor	
Oil and Grease	
Turbidity	

[1] Subject to review

Table 2.4-3. (Continued)

Quarterly		
Organics	Radioactivity	Element or Compound
Total organic C • if < 10mg/l no additional analysis • if > 10mg/l then, Dissolved organic C Suspended organic C Phenols Sulfate Nitrogen Chemical oxygen demand Fecal coliform Pesticides	Gross Alpha > 4 picocuries/l analyze for RA 226 Gross Beta • if > 100 picocuries/l analyze for Th 230 and Natural Uranium	Complete Element Scan

2.4.11 - Miscellaneous Studies Data

RBOSP PROGRESS REPORT

APPENDIX E-22-2

WATER QUALITY DATA
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

APPENDIX E-22-1

WATER QUALITY DATA SPECTROGRAPHIC ELEMENT SCAN
RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975
(Data are expressed in mg/l and are based upon dissolved solids).

Parameter	Station 25 Replicate A	Station 25 Replicate B	Station 34 Replicate A	Station 34 Replicate B
Aluminum (Al)	0.04	0.03	0.04	0.04
Antimony (Sb)	ND	ND	ND	ND
Arsenic (As)	ND	ND	ND	ND
Barium (Ba)	0.03	0.01	< 0.003	< 0.003
Beryllium (Be)	ND	ND	ND	ND
Bismuth (Bi)	ND	ND	ND	ND
Boron (B)	0.03	0.03	0.03	0.03
Cadmium (Cd)	ND	ND	ND	ND
Calcium (Ca)	129	117	130	130
Chromium (Cr)	0.002	0.002	0.002	0.002
Cobolt (Co)	0.003	0.008	0.006	< 0.003
Copper (Cu)	0.006	0.005	0.006	0.006
Germanium (Ge)	ND	ND	ND	ND
Iron (Fe)	0.01	0.01	0.01	0.01
Lead (Pb)	ND	ND	ND	ND
Magnesium (Mg)	44	39	44	44
Manganese (Mn)	0.006	0.005	0.006	0.006
Molybdenum (Mo)	ND	ND	ND	ND
Nickel (Ni)	0.003	0.003	0.003	0.003
Potassium (K)	3.0	2.7	3.0	3.0
Silica (Si)	3.4	3.1	3.4	3.4
Silver (Ag)	ND	ND	ND	ND
Sodium (Na)	67	61	67	67
Strontium (Sr)	6.2	5.6	6.2	6.2
Tellurium (Te)	ND	ND	ND	ND
Tin (Sn)	0.006	< 0.003	< 0.003	0.01
Titanium (Ti)	0.004	0.006	0.002	< 0.002
Vanadium (V)	ND	ND	ND	ND
Wolfram (W)	ND	ND	ND	ND
Zirconium (Zr)	ND	ND	ND	ND

ND = Not Detected

APPENDIX E-22-2

WATER QUALITY DATA, RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975. (Data are expressed in mg/l unless otherwise noted.)

PARAMETER	STATION 25 A	STATION 25 B	STATION 34 A	STATION 34 B
	REPLICATE		REPLICATE	
Aresenic (As), Diss	<0.01	<0.01	<0.01	<0.01
Barium (Ba), Diss	<0.1	<0.1	<0.1	<0.1
Boron (Bo), Diss	<0.5	<0.5	<0.5	<0.5
Cadmium (Cd), Diss	<0.01	<0.01	<0.01	<0.01
Carbon (C) Organic	<1	<1	<1	<1
Carbon (C) Organic Diss	3	<1	1	<1
Carbon (C) Organic Suspended	<1	<1	<1	<1
Chemical Oxygen Demand (O_2)	6	5	5	<5
Chromium (Cr) Total Diss	<0.03	<0.03	<0.03	<0.03
Copper (Cu), Diss	<0.02	<0.02	<0.02	<0.02
Cyanide (Cn), Total	<0.001	<0.001	<0.001	<0.001
Fluoride (F), Diss	0.23	0.21	0.16	0.21
Iron (Fe), Total Diss	0.02	0.02	0.02	0.02
Lead (Pb), Diss	<0.05	<0.05	<0.05	<0.05
Lithium (Li), Diss	<0.02	0.02	0.02	0.02
Manganese (Mn), Diss	<0.02	<0.02	<0.02	<0.02
Mercury (Hg), Diss (µg/l)	0.3	0.2	<0.2	<0.2
Nitrogen (N), Organic	0.25	0.21	0.16	0.15
Phosphorus (P), Total Diss	<0.01	<0.01	<0.01	<0.01
Phenolic compounds (Phenol)	0.011	0.007	0.007	0.006
Selenium (Se), Diss	<0.01	<0.01	<0.01	<0.01
Solvent extract (Oil)	0.06	0.03	0.03	0.01
Sulfate (S), Diss	144	141	138	138
Sulfide (S), Diss	<0.02	<0.02	<0.02	<0.02
Sulfur (S), Organic	1	9	8	4
Zinc (Zn), Diss	<0.02	<0.02	<0.02	<0.02

Diss = Dissolved

RBOSP PROGRESS REPORT

APPENDIX E-22-3

WATER QUALITY DATA, SELECTED PESTICIDE ANALYSES
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

RBOSP PROGRESS REPORT

APPENDIX E-22-3

WATER QUALITY DATA, SELECTED PESTICIDE ANALYSES
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975. (Data are expressed in mg/l.)

PARAMETER	STATION			
	REPLICATE			
	25		34	
	A	B	A	B
Lindane	<0.0001	<0.0001	<0.0001	<0.0001
Malathion	<0.0005	<0.0005	<0.0005	<0.0005
Parathion	<0.0001	<0.0001	<0.0001	<0.0001
Toxaphene	<0.002	<0.002	<0.002	<0.002

RBOSP PROGRESS REPORT

APPENDIX E-22-4

FECAL COLIFORM BACTERIAL ANALYSIS
RBOSP AQUATIC BASELINE STUDIES
OCTOBER 1975

[illegible]

APPENDIX E-22-4

FECAL COLIFORM BACTERIAL ANALYSIS, RBOSP AQUATIC BASELINE STUDIES, OCTOBER 1975

Station Replicate	Colonies/100 ml
25-A	5
25-B	4
34-A	1
34-B	1

RBOSP PROGRESS REPORT

APPENDIX E-23-1

WATER QUALITY DATA
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1975

APPENDIX E-23-1

WATER QUALITY DATA, RBOSP AQUATIC BASELINE STUDIES
DECEMBER, 1975. (Data are expressed in mg/l unless otherwise noted.)

PARAMETER	STATION / REPLICATE			
	25		34	
	A	B	A	B
Arsenic (As), Diss	0.04	0.04	< 0.01	< 0.01
Barium (Ba), Diss	< 0.1	< 0.1	< 0.1	< 0.1
Boron (Bo), Diss	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium (Cd), Diss	< 0.01	< 0.01	< 0.01	< 0.01
Carbon (C), Organic				
Carbon (C), Organic Diss				
Carbon (C), Organic Suspended				
Chemical Oxygen Demand (O_2)				
Chromium (Cr), Total Diss	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu), Diss	< 0.02	< 0.02	< 0.02	< 0.02
Cyanide (Cn), Total	< 0.001	< 0.001	< 0.001	< 0.001
Fluoride (F), Diss	0.28	0.27	0.23	0.23
Iron (Fe), Total Diss	0.03	0.04	0.04	0.03
Lead (Pb), Diss	< 0.05	< 0.05	< 0.05	< 0.05
Lithium (Li), Diss		0.04	0.04	0.04
Manganese (Mn), Diss	0.02	0.02	< 0.02	< 0.02
Mercury (Hg), Diss (µg/l)	0.3	0.3	< 0.2	< 0.2
Nitrogen (N), Organic				
Phosphorus (P), Total Diss	< 0.01	< 0.01	< 0.01	< 0.01
Phenolic compounds (Phenol)				
Selenium (Se), Diss	< 0.01	< 0.01	< 0.01	< 0.01
Solvent extract (Oil)	0.55	< 0.003	< 0.29	< 0.003
Sulfate (S), Diss	52	51	51	51
Sulfide (S), Diss	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur (S), Organic				
Zinc (Zn), Diss	0.02	< 0.02	< 0.02	< 0.02

Diss = Dissolved

RBOSP PROGRESS REPORT

APPENDIX E-24-1

WATER QUALITY DATA
RBOSP AQUATIC BASELINE STUDIES
FEBRUARY 1976

APPENDIX E-24-1

WATER QUALITY DATA, RBOSP AQUATIC BASELINE STUDIES
FEBRUARY, 1976. (Data are expressed in mg/l unless otherwise noted.)

PARAMETER	STATION 25 A	STATION 25 B	STATION 34 A	STATION 34 B
Arsenic (As), Diss	< 0.01	< 0.01	< 0.01	< 0.01
Barium (Ba), Diss	< 0.1	< 0.1	< 0.1	< 0.1
Boron (Bo), Diss	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium (Cd), Diss	< 0.01	< 0.01	< 0.01	< 0.01
Carbon (C), Organic	1	< 1	10	2
Carbon (C), Organic Diss	1	1	2	2
Carbon (C), Organic Suspended	< 1	< 1	8	< 1
Chemical Oxygen Demand (O_2)	11	11	11	11
Chromium (Cr), Total Diss	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu), Diss	< 0.02	< 0.02	< 0.02	< 0.02
Cyanide (Cn), Total	< 0.001	< 0.001	< 0.001	< 0.001
Fluoride (F), Diss	0.14	0.16	0.14	0.14
Iron (Fe), Total Diss	0.02	0.03	0.03	0.03
Lead (Pb), Diss	< 0.05	< 0.05	< 0.05	< 0.05
Lithium (Li), Diss	0.04	0.04	0.03	0.03
Manganese (Mn), Diss	< 0.02	< 0.02	< 0.02	< 0.02
Mercury (Hg), Diss (µg/l)	< 0.2	< 0.2	< 0.2	< 0.2
Nitrogen (N), Organic	0.37	0.35	0.38	0.44
Phosphorus (P), Total Diss	0.04	0.04	0.07	0.05
Phenolic compounds (Phenol)	0.006	0.011	0.008	0.008
Selenium (Se), Diss	< 0.01	< 0.01	< 0.01	< 0.01
Solvent extract (Oil)	0.54	< 0.003	< 0.003	< 0.003
Sulfate (S), Diss	54	53	53	53
Sulfide (S), Diss	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur (S), Organic	< 1	< 1	< 1	< 1
Zinc (Zn), Diss	0.04	< 0.02	0.05	0.03

Diss = Dissolved

RBOSP PROGRESS REPORT

APPENDIX E-24-2

WATER QUALITY DATA, SELECTED PESTICIDE ANALYSES
RBOSP AQUATIC BASELINE STUDIES
FEBRUARY 1976

APPENDIX E-24-2

WATER QUALITY DATA, SELECTED PESTICIDE ANALYSES
RBOSP AQUATIC BASELINE STUDIES, FEBRUARY, 1976
(Data are expressed in mg/l.)

Parameter	Station Replicate			
	25		34	
	A	B	A	B
Lindane	<0.0001	<0.0001	<0.0001	<0.0001
Malathion	<0.0005	<0.0005	<0.0005	<0.0005
Parathion	<0.0001	<0.0001	<0.0001	<0.0001
Toxaphene	<0.002	<0.002	<0.002	<0.002

RBOSP PROGRESS REPORT

APPENDIX E-24-3

FECAL COLIFORM BACTERIAL ANALYSES
RBOSP AQUATIC BASELINE STUDIES
FEBRUARY 1976

APPENDIX E-24-3

FECAL COLIFORM BACTERIAL ANALYSES
RBOSP AQUATIC BASELINE STUDIES, FEBRUARY, 1976

Station Replicate	Colonies/100 ml
25-A	13
25-B	12
34-A	5
34-B	6

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2.5 OTHER ENVIRONMENTAL STUDIES

OTHER ENVIRONMENTAL PROGRAMS

Prepared for the

Rio Blanco Oil Shale Project

by

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April 1976

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2.5 Other Environmental Programs

2.5.1 Soils Survey and Productivity Assessment Studies

An inventory of soil types found on Tract C-a and adjacent areas and their physical and chemical characteristics and distribution is being conducted. Soils data are needed to understand the diverse relationships involved between soils, plants and wildlife and to design a revegetation program. Chemical data from overburden analyses are used to identify possibly toxic strata which may affect revegetation or lead to potential pollution of aquatic systems through leaching action on stockpiles or spent shale disposal sites. Physical and structural testing of soils and overburden are done to evaluate use potential for plant structures, disposal and storage sites, and reservoir construction.

A limited amount of information on general physical and chemical characteristics of soils and overburden of the oil shale area can be found in reports prepared by Campbell, et al. (1974) and Fox (1974). A general soils map (compiled at a scale of 1:250,000) of the oil shale area in Colorado was prepared by Campbell, et al. (1974). This general soils map includes Rio Blanco, Garfield, and Mesa counties.

2.5.1.1 Objectives

The objectives of the soil survey are to describe and map soil series, depths of the various horizons of soil, strike and dip of the soil, slope, vegetation cover, and erodibility. Soil maps, by providing information on the geographical extent and areal distribution of soils, erosion potential, sediment yield, runoff potential, site suitability, etc., can be used to make reliable predictions about soil behavior when subjected to various uses.

Studies of soil chemistry provide information on major and minor chemical elements in soils and provide a measure of the potential nutritive and toxic elements. Soil chemistry data are being correlated with phytosociological and plant distribution data to 1) ascertain relationships between plant response and soil chemical characteristics and 2) to determine if potentially toxic materials are present that may limit rehabilitation efforts and/or contribute potentially toxic materials (especially trace metals) to surface and groundwater systems.

Physical tests of soils aid in identifying soils and evaluating erosion potential and moisture-holding capacity of soils that may be used for revegetation.

2.5.1.2 Methods

A preliminary soils and vegetation survey of Tract C-a, 84 Mesa,

and adjacent areas was conducted in Spring 1975. Several soil pits were excavated concurrently with soil coring to identify soil series distribution. These data were used to produce a preliminary map of soil series distribution on Tract C-a and adjacent areas. More detailed information on the distribution of the various soil types, depths, zonation, number, width of horizons, and physical and chemical characteristics is being prepared and correlated with the type and success of vegetation in the area. Soil profiles of the area are being determined by field sampling from soil pits and by study of soil profiles exposed along road cuts and erosion faces.

Soil samples are taken at each of the 35 permanent vegetation sampling plots. In addition, five soil sampling sites are associated with each of the 11 major soil series.

Surface soil is collected from each soil horizon or, in the case of nondefinitive horizons, composite soil samples are collected at intervals from 0 to 10 cm, 10 to 50 cm, 50 to 100 cm, and 100 to 150 cm. In either case, a minimum of four soil samples per sample site are being collected.

Composite soil samples were taken using a 5-cm (2-in) diameter split spoon sampler at 45-cm (1.5-ft) increments down to 135 cm (4.5 ft). These samples, which supplement the surface soil sampling program, were taken from areas to be impacted by the mining operation. These additional sites include the on-site open pit mine areas and the proposed water control dam site area. These samples are currently undergoing chemical analysis.

Each of the soil samples are individually subjected to the laboratory analyses indicated below. Most procedures of chemical and physical analyses follow methods discussed by Black, et al. (1965).

Chemical Analysis

pH water
pH $CaCl_2$
Conductivity
Cation Exchange Capacity
Lime
Gypsum
Organic Matter
As
Cd
Cl
Cr
Co
F
Hg
Mo
NH_4
NO_3
Sb
Se
V

$NaHCO_3$ Extractable P
Total P

Water Soluble:
- B
- Ca
- K
- Mg
- Na
- SO_4

NH_4Ac Extractable:
- K
- Na
- Ni
- Pb

DTPA Extractable:
- Cu
- Fe
- Mn
- Zn

Background Radioactivity As:
- Uranium
- Equivalent Uranium
- Equivalent Thorium
- Potassium Radioactivity

Physical Analysis

Particle size distribution and classification - Bulk density
Soil moisture release curves - relationship between soil water potential and percent moisture.

2.5.1.3 Results

The preliminary soil map prepared by the SCS is currently undergoing further revisions. A general description of the 11 soil series (or associations) and rock outcrops encountered during surveying and mapping by the SCS are discussed in the RBOSP Annual Report, 1976.

Soil samples are currently being analyzed. Results will be submitted to the AOSS upon completion of the various programs (end of second quarter of 1976).

Literature Cited

Black, C.A., editor. 1965. Methods of soil analysis. Part I. Physical and mineralogical properties, including statistics of measurement and sampling. Part 2. Chemical and microbiological properties. American Society of Agronomy, Agronomy Series No. 9, Madison, WI. 2v.

Campbell, J.A., W.A. Berg, and R.D. Heil. 1974. Physical and chemical characteristics of overburden, spoils, and soils. In surface rehabilitation of land disturbances resulting from oil shale development, Colorado State University, Fort Collins, pp. 112-179.

Fox, Charles J. 1974. Soils impact analysis, Piceance Creek Basin, Rio Blanco and Garfield counties, Colorado. Thorne Ecological Institute ROSS-15, Boulder, CO. 35p.

Rio Blanco Oil Shale Project. 1976. Annual Report. Gulf Oil Corporation and Standard Oil of Indiana. Denver, CO. (In Press).

2.5.2 Archaeological Survey

2.5.2.1 Objectives

The objectives of the archaeology survey have been described in the DDP (RBOSP, 1976a) and previous quarterly progress reports (RBOSP, 1975, 1976b). One of the purposes of the detailed laboratory analysis is to determine if any sites are eligible for nomination to the National Register of Historic Places as set forth in the Federal Register 1966, and the Executive Order, 11593, 1971.

2.5.2.2 Methods

An extensive field survey and in-depth laboratory analysis were conducted. Methods used during the field survey and initial laboratory analyses were described in the DDP (RBOSP, 1976a) and previous quarterly progress reports (RBOSP 1975; 1976b). Further laboratory analysis has resulted in additional information on the cultural history of the area.

Refinement of site designations - Analysis of artifacts in the laboratory has lead to a refinement in site classifications. Three site classifications, Primary, Secondary and Tertiary, were originally used to describe locations yielding archaeological and historical material.

A quantitative system was designed in which numerical point values were assigned to various tool types, structures and pottery. The total number of points determined the site classification in the three grades.

Sites with more than 75 points were classified as Primary sites; those with 25 to 75 points, Secondary sites; and those with less than 25 points, Tertiary sites. Sites with the remains of structures such as wickiups were automatically classified as Primary sites.

Lithic Analysis - Additional study of lithic material collected during the survey included a site-by-site inspection of lithic materials. This inspection focused on the following:

- The amount of toolstone (inclusive of all stone artifacts) indigenous to the study area versus the amount of toolstone imported into the study area.
- The number of cortical waste flakes in comparison to the number of non-cortical flakes (a cortical flake retains some portion of the original weathered surface rock material, and is indicative of the first stages of chipped stone tool manufacture.)

- The relationship of waste flake material at a given site, to the chipped stone tools at the same site, including similar materials represented in both wastage and tools.

- The number of tools related to hunting activities versus the number of tools related to processing of vegetal foods.

Projectile point descriptions - Projectile points found during the RBOSP archaeological survey were examined in detail. This examination included measuring the specimens, defining the material of which they were made and classifying them into types on the basis of shape and size. A search of the literature was made to compare projectile points found during the survey to those found from other areas. The objective was to establish a relative date, geographic distribution and cultural affiliations.

Cluster Analysis - All the sites were mapped on a basemap derived from the 7-1/2 Minute Series USGS Topographic maps. Primary and Secondary sites were isolated and compared; in addition the number of Tertiary sites in a given cluster was assessed to give additional information. Cultural affiliations, when known, were also plotted, although this could not be determined for all sites.

The distributions of the various types of sites, their locations in relation to prominent topographic features, and types of artifacts recovered, and their cultural relationships were studied to determine cluster boundaries. Results of the cluster analysis revealed the presence of four areas, predominately related to topographic features (uplands) and drainage patterns. A discussion and description of these clusters appears later in this report.

Bibliographic search - A search of the literature was conducted to determine historical use of the area and to compare archaeological material from adjacent areas with material collected during the current survey, particularly for projectile point identification.

2.5.2.3 Results and Discussion

One hundred and ninety-seven sites, containing archaeological or historical material were located during the archaeological survey (Appendix A). Primary or Secondary sites which occurred within the immediate vicinity of the study area are shown in Figure 2.5.2-1. Additional sites were also found along the Yellow Creek drainage, and to the north and east of the tract (see Foldout map in pocket).

Lithic Analysis - Lithic tools were examined to explore the hypothesis that the region was utilized on a seasonal basis for the exploitation of game and vegetal resources. The analysis included identifying the amount of indigenous toolstone versus the amount of imported toolstone. Identification of chipped stone tool materials, which included chert, chalcedony, petrified wood and obsidian, indicate that most of this material was imported. No toolstone quarry sites

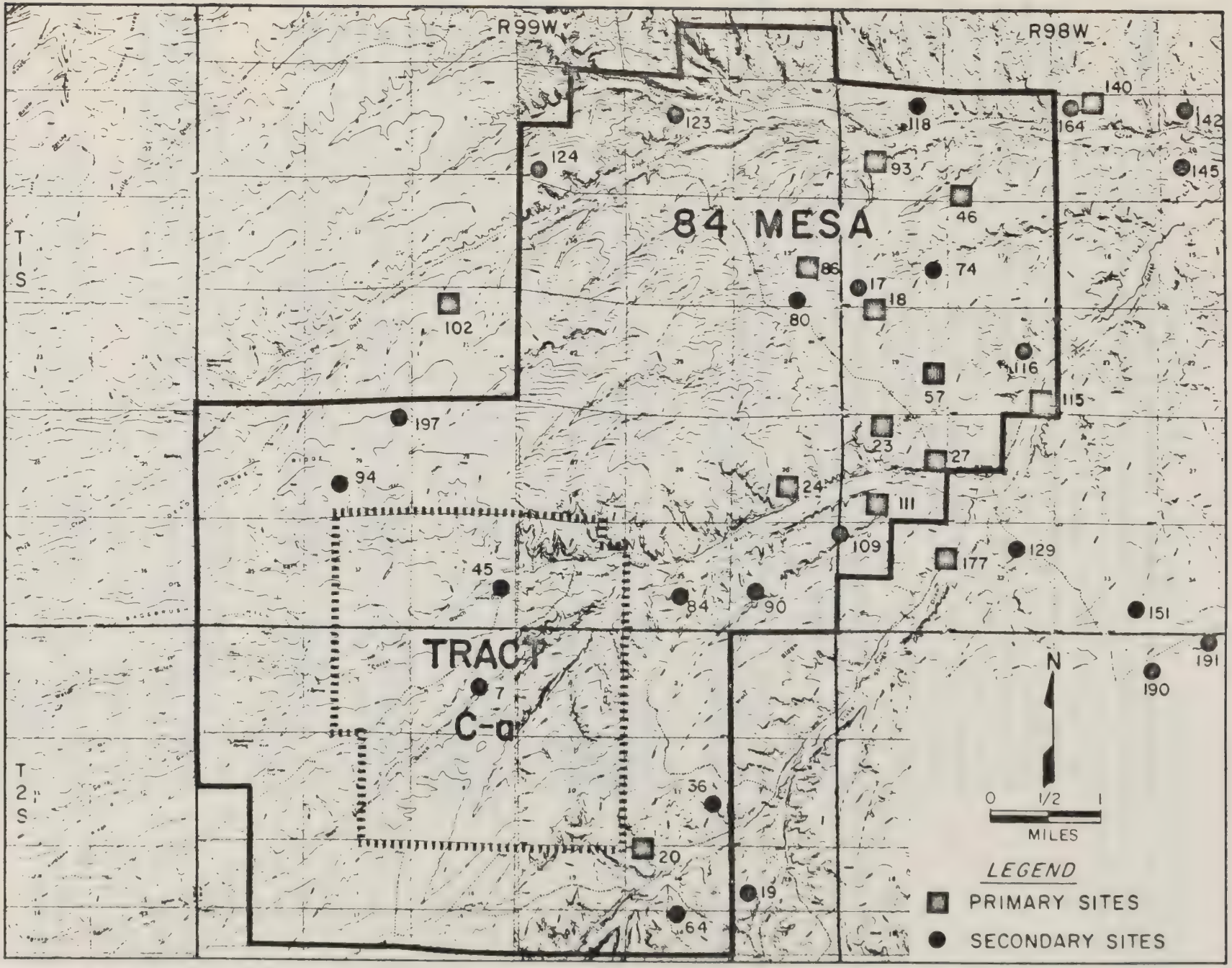


Figure 2.5.2-1 Locations of primary and secondary archaeological sites within the boundaries of Tract C-a, the 1-mile perimeter, and 84 Mesa.

were found in the area. However, ground stone tools were probably made of the local sandstones and shales (Appendix B).

The relationship of waste flake material at a given site, to the amount of chipped stone material at the same site was examined to determine, within certain limitations, whether or not tools had been fashioned at the site location. Cortical flakes (flakes retaining a portion of the rock's original exterior or rind) may indicate manufacture at a particular location. In the initial production of tools, flakes are detached from the basic toolstone or core. The chips themselves can be used as tools or modified into other types of artifacts, or they can be discarded and the core shaped into a particular artifact. The transportation of large blocks of toolstone into remote areas is impractical. The presence of numerous small flakes and finished tools at primary sites suggest processing at a quarry site and then carrying the lighter blanks to be fashioned into tools as needed. These factors, plus the lack of good toolstone sources within the vicinity suggest the toolstone was imported and the tools were finished in the area.

The number of tools recovered from the study area which are associated with hunting was compared to the number associated with gathering activities. As a general rule, projectile points, knives and scrapers (chipped stone tools) are associated with hunting, while manos and metates (groundstone tools) are associated with gathering or farming. Most sites in the study area consist entirely of chipped stone tools and associated waste flakes. Groundstone tools were found only in limited numbers in isolated locations. Scrapers and knives were the most abundant type of tool recovered. The artifacts recovered from the study area indicate an exploitative system based on hunting, supplemented by gathering. The groundstone implements recovered from the study area were probably used to process wild seeds, rather than cultivated crops. Farming may have been practiced, but was probably not profitable. Stewart (1942) documented the use of manos and metates by the Ute for the grinding of pinyon nuts. Much of the study area is covered by pinyon-juniper stands, and pinyon nuts probably represent the single most abundant wild crop found in the area.

Hunting may have been centered around the seasonal movement of the White River mule deer herd, which moves into the area during the latter part of September and early October. Ripening of pinyon nuts also occurs during this period. Aboriginal use of the area probably corresponded with these two events.

Projectile point descriptions - During the RBOSP archaeological survey, a total of 143 projectile points and/or fragments was recovered. Of this total, 50 were identifiable and could be classified by type. Classifications were based primarily on similarities and differences (i.e., shape of blade, base and stem, presence or absence of notching,

size, and refinement). Each major type was subdivided to accommodate subtle differences (variations of base shapes and size). Projectile points were generally manufactured from quartzite, chalcedony, petrified wood, chert and obsidian. Four basic types were identified:

Triangular, unnotched (Type 1)

Triangular, side-notched (Type 2)

Triangular, corner-notched (Type 3)

Corner-notched (Type 4)

Type 1, subdivided into three groups, contains twenty-one identifiable projectile points. Some of these points may be associated with the Fremont Culture.

Nineteen Type 2 points, subdivided into 5 groups, were recovered and classified. They are associated with late Fremont or early Sho-Shonean cultures and are quite common throughout the Great Basin and Southwest.

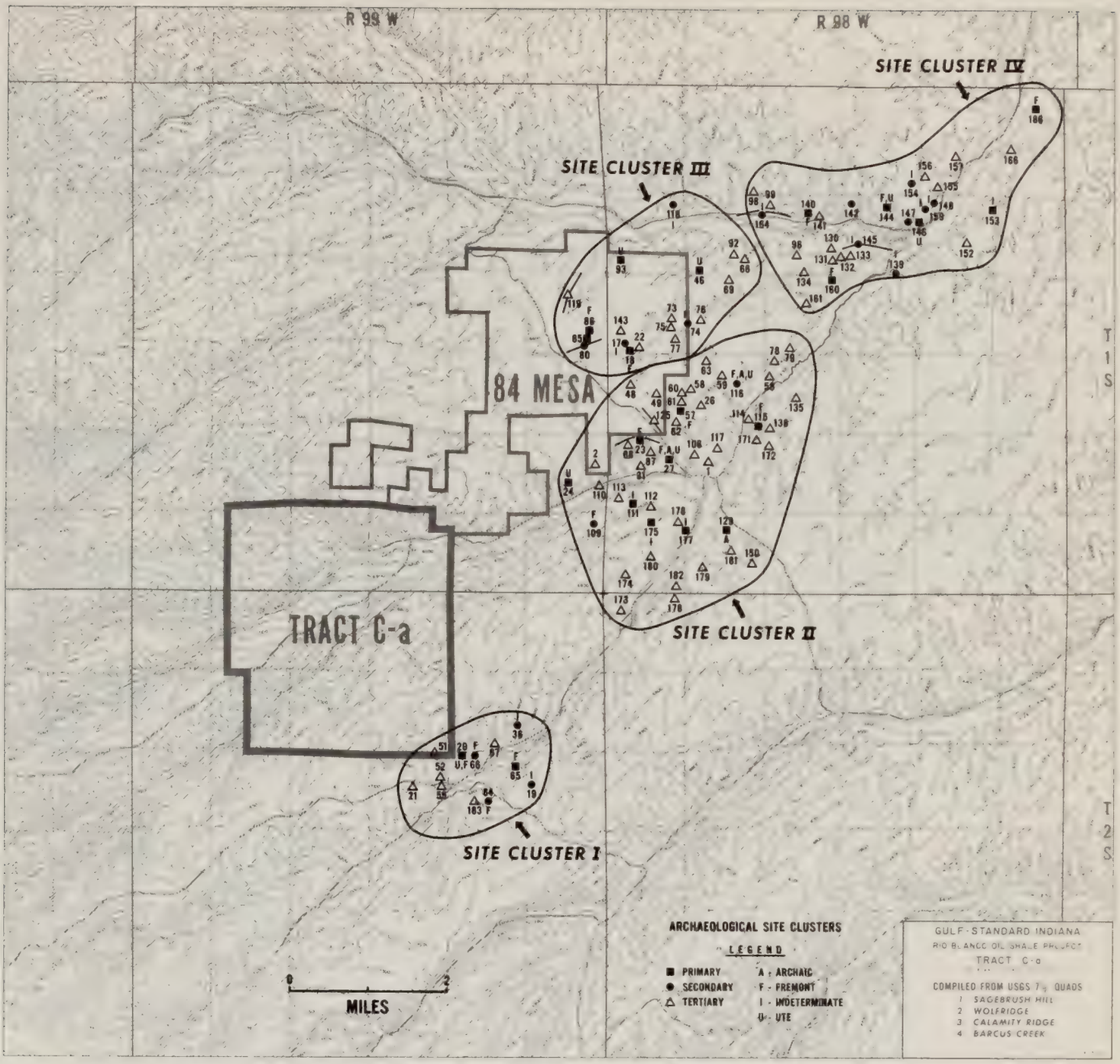
Two Type 3 projectile points are dart points and are the oldest recovered on the survey. Only three were found. Dart points, generally associated with the use of the spear thrower or atl'art', are larger and heavier than later arrow points. Dates recorded for this type from other study areas are about 6400 B.C.

Seventeen Type 4 points were identified. In other areas, Type 4-A points date possibly to 6000 B.C., while the 4-C type dates from Fremont through the occupation of the area by Shoshonean peoples.

Complete descriptions and photographic reproductions of projectile point types recovered from the study area are included in Appendix C.

Cluster Analysis - Four site clusters were established on the basis of concentrations of sites related to topographic features, and proximity to watercourses (Figure 2.5.2-2). Cluster I occurs on upper Stake Springs Draw and encompasses approximately 583 ha (2.25 mi^2). It contains two Primary, four Secondary, and five Tertiary sites. One Primary site is of Fremont and Ute affiliation, and the other Primary site appears to be associated with the Fremont culture (Table 2.5.2-1). The Tertiary sites may represent work areas in the clusters.

Cluster II (Figure 2.5.2-2) occurs at the junction of Corral Gulch and Stake Springs Draw, and encompasses an area of approximately 2,000 ha (7.75 mi^2). Nine Primary, 2 Secondary, and 34 Tertiary sites occur within this cluster. Archaic, Fremont, and Ute cultural affiliations occur within this cluster (Table 2.5.2-2).



Archaeological Site Clusters

Figure 2.5.2 - 2

Table 2.5.2-1. Locations, numbers and descriptions of archaeological sites and materials found in Cluster I.

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
51	T2S,	R99W	S10, SE¼SE¼			1f			T	-
20	T2S,	R99W	S14, NW¼NW¼	2-4f	2f	3-4f	94	Hammerstone, drill(f) Wickiups	P	F(?)-U
21	T2S,	R99W	S15, SW¼NE¼		1		13		T	-
36	T2S,	R99W	S11, NE¼SE¼	1f	1	3f	20		S	I
52	T2S,	R99W	S15, SW¼NE¼		1H		5		T	-
55	T2S,	R99W	S15, SE¼NE¼	2f	1f		4	Toolstone	T	-
64	T2S,	R99W	S14, NW¼SE¼	2f	2f	1		Mano, fossil bones, core	S	F(?)
65	T2S,	R99W	S14, NE¼NE¼	1				Hammerstone		
				3f	1	1f	107	Mano fragment	P	F
66	T2S,	R99W	S14, NE¼NW¼	1f		3f	25		S	I
67	T2S,	R99W	S11, SW¼SE¼			1f	10	Hammerstone	T	-
19	T2S,	R99W	S13, SW¼NW¼	2f	1					
					1f	1f	18	Hammerstone	S	

f = Fragmentary tool, identifiable
H = Historic
P = Primary Site
S = Secondary Site
T = Tertiary Site
F = Fremont
I = Indeterminate
- = Cultural affiliation not attempted because of small number of artifacts

Table 2.5.2-2. Locations, numbers and descriptions of archaeological sites and materials found in Cluster II.

Field Number	Township Range Section	Tool Type					Site Classification	Cultural Affiliation
		Point	Knife	Scraper	Flakes	Other		
111	T1S,R98W S30,SE¼SW¼	2		6	103	Drill & mano fragments	P	A
113	T1S,R98W S30,SW¼SW¼	1f	1	2	5	Mano (f)	T	-
1	T1S,R98W S29,SE¼NW¼		2f	1	7			
				1f			T	-
2	T1S,R99W S25,SE¼NE¼	1	1f		3	Basin Metate (#2)	T	-
23	T1S,R98W S30,NW¼NE¼	3	1					
		7f	6f	15	178	Hammerstone, drill, 3 choppers	P	F
24	T1S,R99W S25,NW¼SE¼	1f		4f	97	Mano fragments	P	F(?)
26	T1S,R98W S20,NW¼SW¼	1	2f	2f	1		T	-
27	T1S,R98W S30,SE¼NE¼	1			177	Potsherds, drill F,		
		11f	9	16		cores, blades, manos	P	A-F
31	T1S,R98W S30,SE¼NW¼	2	1				T	-
48	T1S,R98W S19,SE¼NW¼	1			2		T	-
49	T1S,R98W S19,NW¼SE¼	1f			3		T	-
57	T1S,R98W S19,NE¼SE¼	2f	3	5	63	Drill (f), pottery	P	F
58	T1S,R98W S20,SW¼NW¼				3	1 potsherd	T	-
59	T1S,R98W S20,SE¼NW¼					Mano fragment	T	-
60	T1S,R98W S19,NE¼SE¼					Mano fragment	T	-
61	T1S,R98W S19,NE¼SE¼					Mano	T	-
62	T1S,R98W S19,SE¼SE¼			1f	2		T	-
63	T1S,R98W S20,NE¼NW¼				2		T	-
87	T1S,R98W S30,NW¼NE¼	1f			36	Toolstone	T	-
88	T1S,R98W S30,NW¼NW¼		1f	2		Mano	T	-
106	T1S,R98W S29,SW¼NW¼			1f	1		T	-

Table 2.5.2-2 (Continued)

Field Number	Township Range Section	Tool Type					Site Classification	Cultural Affiliation
		Point	Knife	Scraper	Flakes	Other		
110	T1S,R99W S25,NE¼SE¼			1			T	-
112	T1S,R98W S30,SW¼SE¼				2		T	-
114	T1S,R98W S20,SE¼SE¼				6		T	-
115	T1S,R98W S20,SE¼SE¼	1f	1	6	135	Bone, mano tool-stone, pottery	P	F
116	T1S,R98W S20,SW¼NE¼	2		1	13	Mano, toolstone	S	A-F-U
117	T1S,R98W S29,NE¼NW¼		2	2	9	Mano fragment	T	-
125	T1S,R98W S19,SW¼SE¼			1	8		T	-
109	T1S,R99W S36,NE¼NE¼	1	1	2	82	Mano	S	F(?)
78	T1S,R98W S21,NW¼NW¼	1f		1f	5		T	-
79	T1S,R98W S16,SE¼SW¼			1f			T	-
129	T1S,R98W S32,NW¼NE¼	5f	1f	3f	88		P	A
135	T1S,R98W S21,NE¼SW¼				1		T	-
138	T1S,R98W S21,SW¼SW¼	1f	1f		2	Mano fragment	T	-
150	T1S,R98W S32,NE¼SE¼			1f	6		T	-
171	T1S,R98W S29,NE¼NE¼				3		T	-
172	T1S,R98W S28,NW¼NW¼				3		T	-
173	T2S,R98W S 6,NW¼NW¼			1,2f	5		T	-
174	T1S,R98W S31,SW¼				8		T	-
175	T1S,R98W S31,NW¼NE¼	3f	1f	2f	34	Mano, mano fragment, 5 tool fragments	P	
177	T1S,R98W S32,NW¼NW¼	4f	2f	2	74	Core tool	P	
178	T2S,R98W S 6,NE¼NE¼	1f		1			T	-
179	T1S,R98W S32,NW¼SW¼	1f			3	Tool fragment	T	-
180	T1S,R98W S31,NW¼SE¼	1f			2	Tool fragment	T	-
181	T1S,R98W S32,SW¼NE¼		2f		11	Tool fragment	T	-

Table 2.5.2-2 (Continued)

f = Fragmentary tool, identifiable
P = Primary Site
S = Secondary Site
T = Tertiary Site
F = Fremont
A = Archaic
I = Indeterminate
- = Cultural affiliation not attempted because of small number of artifacts

Cluster III (Figure 2.5.2-2) is located south of Duck Creek and covers about 980 ha (3.5 mi^2). It contains 5 Primary, 4 Secondary, and 10 Tertiary sites. Cultural affiliations include Fremont and Ute (Table 2.5.2-3).

Cluster IV (Figure 2.5.2-2) is located at the confluence of Duck and Yellow Creeks, and encompasses about 1,360 ha (5.25 mi^2). It contains 6 Primary sites, 8 Secondary sites, and 14 Tertiary sites. Ute and Fremont cultural affiliations occur within the cluster (Table 2.5.2-4).

In general, clusters appear to be located on uplands adjacent to watercourses and probably represent seasonal campsites. Lower-lying areas apparently were not used as camping areas, since concentrations of artifacts do not occur in these areas. Site clusters reflect a temporal span of occupation, which probably began as early as 9,000 B.P. Site clusters I, III, and IV exhibit Fremont occupation, which may have begun around 400 to 800 A.D.; Ute occupation, from ? to 1881 A.D.; and present day Anglo use (hunters and stockmen). Cluster II represents a temporal span from 9,000 B.P. through Fremont (136 A.D.) and Anglo (present) and is probably more archaeologically important than the other clusters. The large number of sites within this cluster, the types of projectile points found there, and the longer period of use represented by the artifacts indicate that further study of this area may be warranted.

Bibliographic search - An extensive review of the literature was presented in the DDP (RBOSP, 1976a) and previous quarterly reports (RBOSP, 1976b). C. Jennings (1974) conducted a surface survey in the Piceance Creek Basin in 1973. As a result of his findings, four sites in the vicinity of Tract C-a have been nominated to the National Register of Historic Places (C. Jennings, 1974). These sites include two locations on Tract C-a, and two locations several miles to the east of the tract.

In addition to Jennings' findings, a wickiup village containing the remains of 13 wickiups located on Duck Creek, several miles from the study area has been identified and placed on the National Register of Historic Places (Federal Register, November 20, 1975).

J. Jennings (1974) has postulated that there is convincing evidence that the climate and the resources in the West have remained almost unchanged since 10,000 B.P. and that man's history has been achieved essentially under current climatic conditions. The probably holds true for the Piceance Basin, with limited fluctuations in the flora and fauna of the area.

Surface collecting does not allow for absolute dating, but the types of projectile points found suggest that this area has been utilized for several thousand years, possibly beginning as early as 9,000 B.P.

Table 2.5.2-3. Locations, numbers and descriptions of archaeological sites and materials found in Cluster III.

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
17	T1S,	R98W	S18, SE¼SW¼	1f	3f	3f	6		S	I
22	T1S,	R98W	S18, SE¼SW¼				9		T	-
46	T1S,	R98W	S 8, SW¼SW¼	1f	1f		15	1 historic knife, hammerstone, 5 mano fragments, chopper, core, trade beads, wickiup structure	P	U
68	T1S,	R98W	S 8, SW¼SE¼		1	2f	9		T	-
69	T1S,	R98W	S17, NW¼NE¼				1		T	-
73	T1S,	R98W	S18, NE¼SE¼	1f			2	Mano	T	-
74	T1S,	R98W	S18, NE¼SE¼	1f		3	7	2 mano fragments, chopper	S	I
75	T1S,	R98W	S18, NE¼SE¼				3		T	-
76	T1S,	R98W	S17, NW¼SW¼			1f			T	-
77	T1S,	R98W	S18, SE¼SE¼					Toolstone	T	-
80	T1S,	R99W	S13, SW¼SE¼	1f	1f	4	25	Mano fragment, toolstone	S	I
85	T1S,	R99W	S13, SW¼SE¼		3f	4f	99		P	I
86	T1S,	R99W	S13, NE¼SE¼	1f	3f 4	1 2f	71	Toolstone, pottery	P	F
92	T1S,	R98W	S 8, NW¼SE¼			1	2		T	-
93	T1S,	R98W	S 7, SW¼SW¼					Wickiup structure, toolstone	P	U
118	T1S,	R98W	S 7, NE¼NE¼		4f	1f	25	1 mano fragment	S	I
119	T1S,	R99W	S13, SW¼NE¼	1f			11	Toolstone	T	-
143	T1S,	R98W	S18, NW¼SW¼			1f	1		T	-
18	T1S,	R98W	S18, SE¼SW¼	1 2f	1f	1f	104	Chopper (f)	P	F(?)

Table 2.5.2-3 (Continued)

f = Fragmentary tool, identifiable
P = Primary Site
S = Secondary Site
T = Tertiary Site
F = Fremont
U = Historic Ute
I = Indeterminate
- = Cultural affiliation not attempted because of small number of artifacts

Table 2.5.2-4. Locations, numbers and descriptions of archaeological sites and materials found in Cluster IV.

Field Number	Township Range Section	Tool Type					Site Classification	Cultural Affiliation
		Point	Knife	Scraper	Flakes	Other		
96	T1S,R98W S 9,NE¼SW¼					Mano fragment	T	-
98	T1S,R98W S 5,SE¼SE¼				1	Maul	T	-
130	T1S,R98W S 9,NE¼SE¼					1 mano in two fragments	T	-
131	T1S,R98W S 9,SE¼SE¼					1 mano fragment	T	-
132	T1S,R98W S 9,SE¼SE¼		1f	1f	14		T	-
133	T1S,R98W S10,SW¼SW¼					Mano fragment	T	-
134	T1S,R98W S 9,SE¼SW¼				5		T	-
139	T1S,R98W S10,SW¼SE¼		1f	1	49		S	I
140	T1S,R98W S 9,NE¼NW¼	3f	3f	4 1f	90	Drill, 5 tool fragments, mano, 4 mano fragments, toolstone, wickiups	P	U-F
141	T1S,R98W S 9,NW¼NE¼	1f	1f	2	7		T	-
142	T1S,R98W S10,NW¼NW¼			1	1	3 potsherds, core, hammerstone, mano, 10 mano fragments	S	
144	T1S,R98W S10,NW¼NE¼	1f	1f	3f	28	Mano fragment, wickiup	P	U-F
145	T1S,R98W S10,NW¼SW¼	1f		5f	14		S	I
146	T1S,R98W S10,SE¼NE¼	1f	1f	1	35	Chopper, 3 mano fragments, 2 wickiups, 13 small blue trade beads, 2 small white trade beads, 1 blue bead	P	U
147	T1S,R98W S10,SE¼NE¼		1f	3 4f	22		S	

Table 2.5.2-4 (Continued)

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
148	T1S,	R98W	S11, NW¼NW¼	2f	2f		52	1 gray sandstone bead	S	
152	T1S,	R98W	S11, NW¼SE¼	1		1	13	Mano, hammerstone, 1 hammerstone fragment	T	-
153	T1S,	R98W	S11, NE¼NE¼	1f	4f	6	51	Mano fragment	P	
154	T1S,	R98W	S 2, SW¼SW¼	1 2f	1f	1 1f	89		S	
155	T1S,	R98W	S 2, SW¼SW¼				5		T	-
156	T1S,	R98W	S 2, SW¼SW¼				3	Mano fragment petrified bone	T	-
157	T1S,	R98W	S 2, NE¼SW¼				20	Petrified bone	T	-
159	T1S,	R98W	S11, NW¼NW¼			4 2f	9	Hammerstone, 2 mano fragments	S	
160	T1S,	R98W	S16, NE¼NE¼	3f	4f	1f	43	1 potsherd, 3 mano fragments	P	F
161	T1S,	R98W	S16, SW¼NE¼		1f		4		T	-
164	T1S,	R98W	S 8, NE¼NE¼ S 9, NW¼NW¼	2f	3f	1f	12	Hammerstone, 4 mano fragments, chopper	S	
166	T1S,	R98W	S 1, SW¼NW¼		1	1	10	Mano, hammerstone	T	-
186	T1S,	R98W	S 1, NW¼NE¼	3f	1f	4f	40	Hammerstone, mano fragment, 3 tool fragments	P	F

f = Fragmentary tool, identifiable
P = Primary Site
S = Secondary Site
T = Tertiary Site
F = Fremont

The single most abundant food resource in the Piceance Basin was probably the White River mule deer herd. The basin is currently used as winter range by this herd, one of the largest in North America (RBOSP, Terrestrial Ecological Investigations, 1976b). The deer herd moves into the area during October and remains there until spring. The herd moves out of the basin during the late spring and early summer into an upland range on the Flat Tops area in the upper reaches of the White River drainage. The Piceance Basin is not a prime present day elk range.

Forty-one species of grasses and grass-like plants grow in the area (RBOSP, Terrestrial Report, 1976b). The prehistoric diversity and abundance of wild grasses was probably similar to present day conditions. These grasses represent a potential food resource and were probably harvested when they were available.

Pinyon pine (Pinus edulus) (which individually seed about every five years) may also have been an important food source utilized by aboriginal peoples in the study area. Pinyon-pine seeds mature in late September or early October.

Marginal agriculture may have been practiced in the Piceance Basin. The growing season is 123 days long and the average annual precipitation is 30 to 44 cm (11.9 to 17.2 inches) per year. Current agricultural activity, expect for small gardens at local ranches, is limited to hay meadows. The archaeological survey did not produce any evidence of aboriginal agriculture in the study area.

Evidence of agricultural activity in Northwestern Colorado begins with the Fremont period (Breternitz 1970). Distinctive traits associated with agricultural activity include small village sites, the manufacture and use of pottery, and corn growing. Agricultural utilization of the Piceance Basin by the Fremont people, however, cannot be demonstrated. Fremont structures and granaries, an indication of permanent habitation and a relatively secure economy based on agriculture, were not found in the Piceance Basin. To the contrary, Lithic tools of the Fremont period, indicate that hunting and gathering were important on a seasonal basis.

Six sites contained Historic Ute structures and trade beads. They are 20, 46, 93, 140, 144, and 146 (see Foldout map in pocket). The remains of a Ute wickiup from the study area (A) and a similar Ute wickiup (Denver Public Library) near Cedaridge, Colorado (B) are shown in Figure 2.5.2-3.

Trade beads found on the site were analyzed by Richard Conn, curator of the Denver Art Museum. He tentatively dated one white bead, from site 46, as being from the late 18th century. The blue seed beads found on site 146, are probably from the early 19th century. However, a positive temporal correlation between the beads and the Ute structures is nebulous due to the limited number of samples.

A. Remains of wickiup on site 46 south of Duck Creek.

B. Remains of similar Ute wickiup found near Cedaredge, Colorado.

Figure 2.5.2 - 3

There is no direct evidence of the origin of the Ute who occupied the Yampa and White River drainages. Projecture from scanty archaeological evidence and Escanante's account is that the prehorse Ute resembled other foot Shoshoni groups. However, conclusions about the nature of the prehorse Ute groups and the territory they occupied is only speculative. The first Shoshonean techniques of seed-gathering, fishing, root-digging, and of hunting deer, rabbits and antelope all represent adaptations to a semi-arid environment. Few localities afforded an abundance of food resources and it was necessary for these people to move seasonally to the areas of seed plots or hunting grounds. The quest for food was carried out by individual families or by small groups of families. Cooperation between families occurred only in collective rabbit and antelope drives (Steward, 1974).

The Colorado Utes had horses by 1776 when Escalente traveled through the area. The economic base and socio-political organization was modified as an adaptation to mobility (Steward, 1974). The increased mobility and transportational value of the horse led to closer association between the villages and contributed to a loose band formation built upon personal allegiance to a leader. There was never any over-all Ute political organization. Individuals moved back and forth from one place to another staying with whatever leader offered the greatest hope (Steward, 1974).

By 1850, the Yampa Ute had displaced the Comanche and occupied the general area of the Grand, White and Yampa River drainages. Equestrian Yampa Utes roamed through Colorado, Wyoming and Utah, but wintered in South Middle Parks and North in Colorado. These large intermountain valleys were excellent spots for hunting bison.

After the bison had disappeared from the parks by the 1860's, only small groups of Ute wandered through the region, partly because of the difficulty of procuring enough food to support a large population.

The treaty of 1868 established the northern boundary of the Confederate Ute at about $40^{o}10'$ latitude, 107^{o} longitude on the east and the Colorado Territory boundaries on the west and south. The Ute apparently wandered further in the quest for food after the White River Agency was established (Steward, 1974).

In 1881, after the Meeker Massacre, the White River Utes were moved from Colorado to their present day location on the Uintah and Ouray Reservation in eastern Utah.

In the recent historic period, the Piceance Basin has been used as rangeland for the grazing of sheep and cattle. Although quite seasonal, the area is intensively hunted during the October deer season. The Piceance drainage and Parachute Creek area are known as some of the finest deer hunting areas in western Colorado.

Conclusions - The projectile point analysis and other archaeological evidence found during the survey establishes that man's utilization of the Piceance Basin began possibly as early as 9,000 B.P. Fremont occupied the area from 400 A.D. to 800 A.D. to about 1350 A.D.; the Ute, from ? to 1881; and the Anglos in historic times.

Data assembled to date and ethnographic reports support the supposition that aboriginal man used the Piceance Basin on a seasonal basis geared predominantly to hunting activities, probably associated with seasonal movements of the White River mule deer herd. The relatively small number of ground stone tools in relation to chipped stone tools found during the survey indicates that limited gathering and food processing activities were carried on, but were probably of secondary importance to hunting. Seasonal use of the area probably corresponded to the ripening of pinyon nuts and the movement of the deer herd into the area occur during the later part of September and into October.

Four clusters of archaeological material have been identified in the study area. These clusters provide important information on the temporal span of occupation (the Fremont-Ute relationship and utilization of the area by the Ute) and should be considered for additional study before development of the area proceeds.

A final report on the archaeological significance of the area, including all information assembled during the field and laboratory studies, and recommendations for nomination of sites to the National Register of Historic Places, if any, will be submitted to State and Federal regulatory agencies during the seventh quarter of study. Data to date indicate that some recommendations may be made.

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APPENDIX A - SITE DESCRIPTIONS

APPENDIX B - LITHIC ANALYSIS

APPENDIX C - PROJECTILE POINT ANALYSIS

APPENDIX A

ARCHAEOLOGICAL SITE DESCRIPTIONS

APPENDIX A-1

FIELD SITE NUMBER, SITE LOCATION, AND MATERIAL CULTURE ANALYSIS FOR TRACT C-a ARCHAEOLOGICAL SURVEY.

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
4	T2S,	R99W	S3 , SE¼ NW¼		1f		3	Metate	T	-
5	T1S,	R99W	S34, SW¼ NE¼		1f				T	-
6	T1S,	R99W	S33, NE¼ SW¼	1f	1f				T	-
7	T2S,	R99W	S4 , NW¼ NE¼		1f	6	9		S	I
8	T1S,	R99W	S34, NW¼ SW¼				3		T	-
9	T1S,	R99W	S33, NW¼ SW¼				3		T	-
14	T2S,	R99W	S4 , NE¼ SW¼			1			T	-
15	T1S,	R99W	S34, SE¼ SW¼	1f		1	6		T	-
16	T1S,	R99W	S34, SW¼ SW¼	1f		1	2		T	-
29	T2S,	R99W	S4 , NW¼ SW¼					Tool fragment	T	-
33	T1S,	R99W	S33, SE¼ SW¼			1f			T	-
34	T1S,	R99W	S33, SW¼ NE¼			1f			T	-
37	T2S,	R99W	S10, NW¼ SW¼	1f					T	-
38	T2S,	R99W	S9 , NW¼ NE¼				1		T	-
39	T2S,	R99W	S10, SW¼ SW¼				2		T	-
40	T2S,	R99W	S10, NW¼ NE¼				1		T	-
41	T2S,	R99W	S3 , SE¼ SE¼	1	3f		8		T	-
42	T2S,	R99W	S3 , SW¼ SE¼					Metate F	T	-
43	T2S,	R99W	S9 , NE¼ NW¼				1	Mano fragment		
							1	Tool fragment	T	-
45	T1S,	R99W	S33, NE¼ SE¼	3f	1f		30		S	I
51	T2S,	R99W	S10, SE¼ SE¼			1f			T	-
54	T2S,	R99W	S5 , SW¼ SW¼				5		T	-

f = Identifiable fragmentary tool

T = Tertiary sites

I = Indeterminant cultural affiliations

APPENDIX A-2

FIELD SITE NUMBER, SITE LOCATION AND MATERIAL CULTURE ANALYSIS FOR ARCHAEOLOGICAL SITES LOCATED WITHIN 1-MILE PERIMETER OF TRACT C-a.

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
10	T1S,	R99W	S29, NW¼ SW¼			1f			T	-
11	T1S,	R99W	S29, SW¼ SW¼	1f			2		T	-
12	T1S,	R99W	S29, SW¼ SE¼				4	Graver	T	-
13	T1S,	R99W	S29, SE¼ SE¼		1f	1	1		T	-
20	T2S,	R99W	S14, NW¼ NW¼	2-4f	2f	3-4f	94	Hammerstone, drill(f)	P	F(?)
21	T2S,	R99W	S15, SW¼ NE¼		1		13		T	-
25	T1S,	R99W	S27, SW¼ SE¼			2	7		T	-
28	T2S,	R99W	S8 , SW¼ SW¼				1		T	-
30	T2S,	R99W	S17, SE¼ SE¼	1f		2	19		T	-
32	T1S,	R99W	S27, NE¼ SW¼			1f	15	1 Tooth fragment	T	-
35	T2S,	R99W	S11, SW¼ NE¼				2		T	-
36	T2S,	R99W	S11, NE¼ SE¼	1f	1	3f	20		S	I
44	T2S,	R99W	S17, SW¼ NW¼	1			1		T	-
47	T1S,	R99W	S35, NE¼ NW¼		1f		22		T	-
50	T2S,	R99W	S16, NE¼ NE¼				2		T	-
52	T2S,	R99W	S15, SW¼ NE¼		1 Historic		5		T	-
53	T2S,	R99W	S6 , SW¼ NE¼		1			1 Toolstone	T	-
55	T2S,	R99W	S15, SE¼ NE¼	2f	1f		4	Toolstone	T	-
56	T2S,	R99W	S6 , SW¼ SE¼				1		T	-
64	T2S,	R99W	S14, NW¼ SE¼	2f	2f	1		Mano, fossil bones, core	S	F(?)
65	T2S,	R99W	S14, NE¼ NE¼	1				Hammerstone	P	F(?)
				3f	1	1f	107	Mano fragment	S	I
66	T2S,	R99W	S14, NE¼ NW¼	1f		3f	25		T	-
67	T2S,	R99W	S11, SW¼ SE¼			1f	10	Hammerstone	T	-
70	T2S,	R99W	S11, SE¼ NE¼				1		T	-
71	T2S,	R99W	S11, NW¼ NW¼			1f	8		T	-
72	T2S,	R99W	S2 , NE¼ SW¼				1		T	-
81	T2S,	R99W	S2 , NE¼ NE¼	1					T	-
				2f			2	Core	T	-
82	T1S,	R99W	S35, SW¼ SW¼				2	Mano fragment	T	-
83	T1S,	R99W	S35, SW¼ SW¼					Mano	T	-
84	T1S,	R99W	S35, NW¼ SE¼	2f	1	2f	22	1 Mano fragments, core	S	I

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
94	T1S,	R99W	S29, NW¼ SW¼	1f	1f	3	14		S	I
95	T1S,	R99W	S28, SW¼ NE¼	1f			2		T	-
97	T1S,	R99W	S30, NE¼ NW¼					Toolstone	T	-
103	T1S,	R99W	S30, SE¼ SE¼				3		T	-
104	T1S,	R99W	S31, SW¼ NW¼					Toolstone	T	-
113	T1S,	R98W	S30, SW¼ SW¼	1f	1	2	5	Mano (f)	T	-
197	T1S,	R99W	S29 NE¼ NE¼					Historic Horse Trap	S	A

f = Identifiable fragmentary tool

P = Primary site

S = Secondary site

T = Tertiary site

- = Cultural affiliation not attempted because of small number of artifacts

I = Indeterminate

F = Fremont

A = Anglo

APPENDIX A-3

FIELD SITE NUMBER, SITE LOCATION, AND MATERIAL CULTURE ANALYSIS FOR ARCHAEOLOGICAL SITES ON 84 MESA, RBOSP.

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
1	T1S,	R98W	S29, SE¼ NW¼		2f	1	7			
						1f			T	-
2	T1S,	R99W	S25, SE¼ NE¼	1	1f		3	Basin Metate (#2)	T	-
3	T1S,	R99W	S36, NW¼ SW¼	1f	1f		5		T	-
17	T1S,	R98W	S18, SE¼ SW¼	1f	3f	3f	6		S	I
18	T1S,	R98W	S18, SE¼ SW¼	1						
				2f	1f	1f	104	Chopper (f)	P	F(?)
22	T1S,	R98W	S18, SE¼ SW¼				9		T	-
23	T1S,	R98W	S30, NW¼ NE¼	3	1					
				7f	6f	15	178	Hammerstone, drill, 3 choppers	P	F
24	T1S,	R99W	S25, NW¼ SE¼	1f		4f	97	Mano fragments	P	F(?)
26	T1S,	R98W	S20, NW¼ SW¼	1	2f	2f	1		T	-
27	T1S,	R98W	S30, SE¼ NE¼	1			177	Potsherds, drill F		
				11f	9	16		cores, blades, Manos	P	A-F
31	T1S,	R98W	S30, SE¼ NW¼	2	1				T	-
46	T1S,	R98W	S8 , SW¼ SW¼	1f	1f		15	1 historic knife, hammerstone, 5 Mano fragments, chopper, core, trade beads, wickiup structure	P	U
48	T1S,	R98W	S19, SE¼ NW¼	1			2		T	-
49	T1S,	R98W	S19, NW¼ SE¼	1f			3		T	-
57	T1S,	R98W	S19, NE¼ SE¼	2f	3	5	63	Drill (f), pottery	P	F
58	T1S,	R98W	S20, SW¼ NW¼				3	1 potsherd	T	-
59	T1S,	R98W	S20, SE¼ NW¼					Mano fragment	T	-
60	T1S,	R98W	S19, NE¼ SE¼					Mano fragment	T	-
61	T1S,	R98W	S19, NE¼ SE¼					Mano	T	-
62	T1S,	R98W	S19, SE¼ SE¼			1f	2		T	-
63	T1S,	R98W	S20, NE¼ NW¼				2		T	-
68	T1S,	R98W	S8 , SW¼ SE¼		1	2f	9		T	-
69	T1S,	R98W	S17, NW¼ NE¼				1		T	-

APPENDIX A-3 (Continued)

Field Number	Township	Range	Section	Tool Type: Point	Knife	Scraper	Flakes	Other	Site Classification	Cultural Affiliation
73	T1S,	R98W	S18, NE¼ SE¼	1f			2	Mano	T	-
74	T1S,	R98W	S18, NE¼ SE¼	1f		3	7	2 Mano fragments, chopper	S	I
75	T1S,	R98W	S18, NE¼ SE¼				3		T	-
76	T1S,	R98W	S17, NW¼ SW¼			1f			T	-
77	T1S,	R98W	S18, SE¼ SE¼					Toolstone	T	-
80	T1S,	R99W	S13, SW¼ SE¼	1f	1f	4	25	Mano fragment, toolstone	S	I
85	T1S,	R99W	S13, SW¼ SE¼		3f	4f	99		P	I
86	T1S,	R99W	S13, NE¼ SE¼	1f	3f	1		Toolstone, pottery		
					4	2f	71		P	F
87	T1S,	R98W	S30, NW¼ NE¼	1f			36	Toolstone	T	-
88	T1S,	R98W	S30, NW¼ NW¼		1f	2		Mano	T	-
90	T1S,	R99W	S36, NE¼ SW¼	1	3f	1	22	Mano	S	I
91	T1S,	R99W	S11, SE¼ SW¼				1		T	-
92	T1S,	R98W	S8 , NW¼ SE¼			1	2		T	-
93	T1S,	R98W	S7 , SW¼ SW¼					Wickiup structure toolstone	P	U
105	T1S,	R99W	S14, SE¼ SE¼			1f	1		T	-
106	T1S,	R98W	S29, SW¼ NW¼			1f	1		T	-
107	T1S,	R99W	S36, SE¼ NW¼		1f	1f	14		T	-
108	T1S,	R99W	S14, SE¼ SE¼				4		T	-
110	T1S,	R99W	S25, NE¼ SE¼			1			T	-
111	T1S,	R98W	S30, SE¼ SW¼	2		6	103	Drill fragment, Mano fragments, toolstone	P	I
112	T1S,	R98W	S30, SW¼ SE¼				2		T	-
114	T1S,	R98W	S20, SE¼ SE¼				6		T	-
115	T1S,	R98W	S20, SE¼ SE¼	1f	1	6	135	Bone, Mano tool-stone, pottery	P	F
116	T1S,	R98W	S20, SW¼ NE¼	2		1	13	Mano, toolstone	S	A-F-U
117	T1S,	R98W	S29, NE¼ NW¼		2	2	9	Mano fragment	T	-
118	T1S,	R98W	S7 , NE¼ NE¼		4f	1f	25	1 Mano fragment	S	I
119	T1S,	R99W	S13, SW¼ NE¼	1f			11	Toolstone	T	-
120	T1S,	R99W	S11, SE¼ NE¼				2		T	-
121	T1S,	R99W	S2 , SW¼ SE¼					Mano fragment	T	-
122	T1S,	R99W	S12, NE¼ NW¼			1f	6		T	-

APPENDIX A-3 (Continued)

Field Number	Township	Range	Section	Tool Type					Site Classification	Cultural Affiliation
				Point	Knife	Scraper	Flakes	Other		
123	T1S,	R99W	S11, SW¼ NE¼			4	17	Core, 2 Mano fragments, toolstone, bone	S	I
124	T1S,	R99W	S10, SE¼ SW¼	1			74		S	I
125	T1S,	R98W	S19, SW¼ SE¼			1	8		T	-
126	T1S,	R99W	S15, SE¼ NE¼				1		T	-
127	T1S,	R99W	S11, SW¼ SW¼			1	2		T	-
128	T1S,	R99W	S15, NW¼ NE¼			1 1f	13	1 Mano fragment, 1 hammerstone, toolstone	T	-
143	T1S,	R98W	S18, NW¼ SW¼			1f	1		T	-
109	T1S,	R99W	S36, NE¼ NE¼	1	1	2	82	Mano	S	F(?)

f = Identifiable fragmentary tool

P = Primary

S = Secondary

T = Tertiary

- = Cultural affiliation not attempted because of small number of artifacts

I = Indeterminate

A = Archaic

F = Fremont

U = Historic Ute

APPENDIX A-4

FIELD SITE NUMBER, SITE LOCATION AND MATERIAL CULTURE ANALYSIS FOR OFF-TRACT ARCHAEOLOGICAL SITES.

Field Number	Township	Range	Section	Tool Type					Site Classification
				Point	Knife	Scraper	Flakes	Other	
19	T2S,	R99W	S13, SW¼ NW¼	2f	1				
					1f	1f	18	Hammerstone	S
78	T1S,	R98W	S21, NW¼ NW¼	1f		1f	5		T
79	T1S,	R98W	S16, SE¼ SW¼			1f			T
89	T2S,	R100W	S13, SE¼ NE¼		1f				T
96	T1S,	R98W	S9 , NE¼ SW¼					Mano fragment	T
98	T1S,	R98W	S5 , SE¼ SE¼				1	Maul	T
99	T1S,	R98W	S9 , NW¼ NW¼					Mano fragment	T
100	T1S,	R99W	S21, SE¼ SW¼				5	Mano fragment	T
101	T1S,	R99W	S21, NW¼ SE¼	1					T
102	T1S,	R99W	S21, NE¼ NW¼			1f			T
129	T1S,	R98W	S32, NW¼ NE¼	5f	1f	3f	88		P
130	T1S,	R98W	S9 , NE¼ SE¼					1 Mano in 2 fragments	T
131	T1S,	R98W	S9 , SE¼ SE¼					1 Mano fragment	T
132	T1S,	R98W	S9 , SE¼ SE¼		1f	1f	14		T
133	T1S,	R98W	S10, SW¼ SW¼					Mano fragment	T
134	T1S,	R98W	S9 , SE¼ SW¼				5		T
135	T1S,	R98W	S21, NE¼ SW¼				1		T
136	T1S,	R98W	S22, NW¼ NW¼				1		T
137	T1S,	R98W	S22, NE¼ NW¼	1f				Toolstone fragment	T
138	T1S,	R98W	S21, SW¼ SW¼	1f	1f		2	Mano fragment	T
139	T1S,	R98W	S10, SW¼ SE¼		1f	1	49		S
140	T1S,	R98W	S9 , NE¼ NW¼	3f	3f	4			
						1f	90	Drill, 5 tool fragments, Mano, 4 Mano fragments, toolstone	P
141	T1S,	R98W	S9 , NW¼ NE¼	1f	1f	2	7		T
142	T1S,	R98W	S10, NW¼ NW¼			1	1	3 potsherds, core, hammerstone, Mano, 10 Mano fragments	S
144	T1S,	R98W	S10, NW¼ NE¼	1f	1f	3f	28	Mano fragment, wickiup	P
145	T1S,	R98W	S10, NW¼ SW¼	1f		5f	14		S

Field Number	Township	Range	Section	Tool Type					Site Classification
				Point	Knife	Scraper	Flakes	Other	
146	T1S,	R98W	S10, SE¼ NE¼	1f	1f	1	35	Chopper, 3 Mano (f), 2 wickiups, 13 small blue trade beads, 2 small white trade beads, 1 blue bead	P
147	T1S,	R98W	S10, SE¼ NE¼		1f	3			
						4f	22		S
148	T1S,	R98W	S11, NW¼ NW¼	2f	2f		52	1 gray sandstone bead	S
149	T2S,	R98W	S4 , SW¼ SW¼			1	3	1 potsherd	T
150	T1S,	R98W	S32, NE¼ SE¼			1f	6		T
151	T1S,	R98W	S33, SW¼ SE¼	2f	1f	4f	42		S
152	T1S,	R98W	S11, NW¼ SE¼	1		1	13	Mano, hammerstone, 1 hammerstone fragment	T
153	T1S,	R98W	S11, NE¼ NE¼	1f	4f	6	51	Mano fragment	P
154	T1S,	R98W	S2 , SW¼ SW¼	1		1			
				2f	1f	1f	89		S
155	T1S,	R98W	S2 , SW¼ SW¼				5		T
156	T1S,	R98W	S2 , SW¼ SW¼				3	Mano fragment petrified bone	T
157	T1S,	R98W	S2 , NE¼ SW¼				20	Petrified bone	T
158	T1S,	R98W	S21, SW¼ NW¼				6	Petrified bone	T
159	T1S,	R98W	S11, NW¼ NW¼			4	9	Hammerstone, 2 Mano fragments	
						2f			S
160	T1S,	R98W	S16, NE¼ NE¼	3f	4f	1f	43	1 potsherd, 3 Mano fragments	P
161	T1S,	R98W	S16, SW¼ NE¼		1f		4		T
162	T1S,	R98W	S34, NW¼					Mano fragment	T
163	T1S,	R98W	S33, NE¼ NE¼		1f		2	Mano fragment	T
164	T1S,	R98W	S8 , NE¼ NE¼	2f	3f	1f	12	Hammerstone, 4 Mano fragments, chopper	S
			S9 , NW¼ NW¼						
165	T1S,	R98W	S16, SE¼ SE¼	2f	1f		6	Core	T
166	T1S,	R98W	S1 , SW¼ NW¼		1	1	10	Mano, hammerstone	T
167	T1S,	R98W	S35, NW¼ SW¼	1f	1f		3	Core, Mano fragment	T
168	T2S,	R98W	S2 , SE¼ SE¼	1f			3		T

APPENDIX A-4 (Continued)

Field Number	Township	Range	Section	Tool Type					Site Classification
				Point	Knife	Scraper	Flakes	Other	
169	T1S,	R97W	S19, SW¼ SW¼				2	Mano fragment	T
170	T1S,	R97W	S18, SE¼ NW¼				1		T
171	T1S,	R98W	S29, NE¼ NE¼				3		T
172	T1S,	R98W	S28, NW¼ NW¼				3		T
173	T2S,	R98W	S6 , NW¼ NW¼			1,2f	5		T
174	T1S,	R98W	S31, SW¼				8		T
175	T1S,	R98W	S31, NW¼ NE¼	3f	1f	2f	34	Mano, Mano fragment, 5 tool fragments	P
176	T1S,	R98W	S31, NE¼ NE¼		1f	1	7	Core	T
177	T1S,	R98W	S32, NW¼ NW¼	4f	2f	2	74	Core tool	P
178	T2S,	R98W	S6 , NE¼ NE¼	1f		1			T
179	T1S,	R98W	S32, NW¼ SW¼	1f			3	Tool fragment	T
180	T1S,	R98W	S31, NW¼ SE¼	1f			2	Tool fragment	T
181	T1S,	R98W	S32, SW¼ NE¼		2f		11	Tool fragment	T
182	T1S,	R98W	S31, SE¼ SE¼		1f		42		T
183	T2S,	R99W	S14, NE¼ SW¼					Tool fragment	T
184	T2S,	R99W	S23, NE¼ SW¼				1	Tool fragment	T
185	T2S,	R98W	S19, NW¼ SW¼				1	Tool fragment	T
186	T1S,	R98W	S1 , NW¼ NE¼	3f	1f	4f	40	Hammerstone, Mano fragment, 3 tool fragments	P
187	T1N,	R98W	S36, E½			1f	7	Hammerstone, Mano	T
188	T1N,	R98W	S24, SE¼ SE¼	1f	1f	2	15	5 tool fragments, hammerstone	S
189	T2S,	R98W	S3 , NW¼	1f	1f	1	42	2 tool fragments	S
190	T2S,	R98W	S4 , SE¼ NE¼	1f	2f	3	42	2 toolstone fragments	S
191	T2S,	R98W	S3 , NE¼ NW¼	1					
				1f		1f	11	1 Mano fragment, 2 tool fragments	S
192	T1N,	R98W	S23, NW¼ NW¼		1		1		T
193	T1N,	R98W	S24, NE¼ NW¼	1f		1	16	Tool fragment	T
194	T1N,	R98W	S13, W½	2f		1	8	1 core tool, 1 hammerstone fragment, 1 Mano fragment	S

APPENDIX A-4 (Continued)

Field Number	Township	Range	Section	Tool Type					Site Classification
				Point	Knife	Scraper	Flakes	Other	
195	T1S,	R98W	S34, SW¼ SE¼	1					T
196	T1N,	R98W	S13, E½		1				
					1f	2f	4	Mano, Mano fragments, 3 tool fragments, 4 petrified bone fragments	S

f = Identifiable fragmentary tool

P = Primary site

S = Secondary site

T = Tertiary site

[1] = Sites off-tract other than 84 Mesa or the 1-mile perimeter

[2] = Cultural affiliations of off-tract sites are not yet available

APPENDIX B

LITHIC ANALYSIS

ARCHAEOLOGY

Raw Data Set

DU SITE # _____ TOWNSHIP 15 RANGE [illegible] SECTION 1 1/2 1/4 OF [illegible] 1/4

FIELD # 140 PROJECT [illegible] MAP REF USGS Wolf Ridge, Texas

LOCATION SE Creek

SITE TYPE Habitation CULT. AFF. UTE + Basketmaker RECOM TEST or AVOID

SURVEY DATE 7/22/75 BY APO EXCAV. DATE _____ BY _____

STRUCTURES & FEATURES

3 [illegible]

POTTERY

None

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

4 Points: #1 Base F., Sm. Ch. of gr. color, concave base, parallel sides, prob. Ute variation of Shallow Side Notched

#2 (1) Base F., White to Gr. Ch. w/Pink impurities, Straight base, prob. Ute variation of Side Notched

#3 (1) Fragmented Base, translucent Gr. Ch., appears to be, like #2 but not enough remains to determine

#4 (1) Dark R-Br. Ch. of Elongated, tip + part of base missing, appears Notched, Shallow convex Base, Small serrated [illegible] Base. Rose Springs Corner Notched — 1250 BC - AD 1550.

5 Scrapers: (1) Red Purple Ch. end + side scraper, 1 side is retouched on opposite side of rock than the end and side scrapers, the edge % of the scraping edges varies from ca. 30° to 90°.

#2 (1) Translucent White Gr. Chal., retouched on 2 edges, appears to be fragment.

#3 (1) Highly fractured R-Br. Ch.

#4 (1) Small fragment of [illegible] banded Ch.

#5 (1) R-Br Qtz, large flake, little preparation, (may be utilized flake), but appears to be used as scraper + knife.

Chipped Stone

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY T. Bridge DATE 7/25/75

→ SEE 2nd Card (Sheet)

GROUND STONE-list and describe.

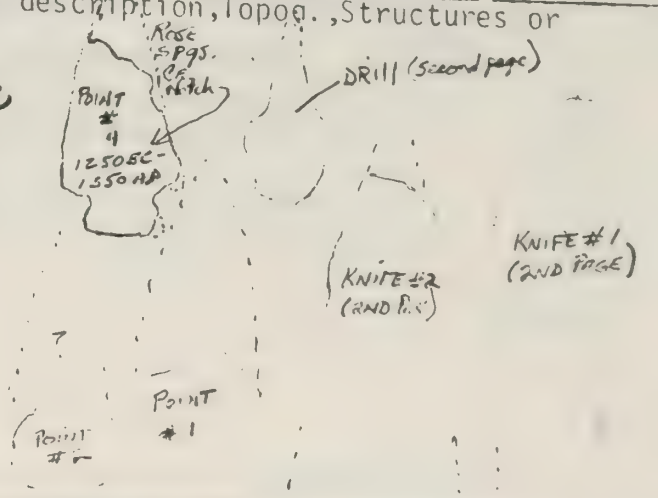
(1) MANO - Tan to Pink Loaf shape Qtz., Bl. patina on top, w/caliche, unifacial, 11.0 cm. long.

(1) Grinding Slab. Sandy - Pink SS, ground + reused to shape, one side is rounded, one broken edge appears to be reused as grooved abrader.

(1) Utilized Flake(?) - Pink SS or Qtz., appears to be ground on small vertical surface, this side is battered on one end., and used as a Knife - Scraper on one edge

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect. Size of site

This is a large site, including site structures, and a large assortment of tool types. The points, esp. pt. #4 indicates an extensive occupation, of Frem. and Late and poss. as Archaic times. It is very probable that this site has had Several Occupations. The diversity of tool types (points, scrapers, knives, drill, planer, mano, grinding slab) indicates many functions of the site. This site should be tested.



FIELD SAMPLES: None

PHOTOS: None

REFERENCE:

FIELD # _____ TOWNSHIP _____ RANGE _____ SECTION _____ ¼ ¼ ¼ OF ¼ ¼

FIELD # 140 PROJECT ABOS 5 MAP REF Hagerman, Idaho 7½ min.

LOCATION off Road

SITE TYPE Habitation CULT. AFF. Late Prehistoric ROOM TEST on Road

SURVEY DATE _____ BY _____ EXCAV. DATE _____ BY _____

STRUCTURES & FEATURES 3 pit house depressions

POTTERY No

SECOND SHEET

(Continued) CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

5 Knives:(1) Br. Qtz, symetrical + bifacial, base broken off.

#2 (1) whitish Gray Cht., tip + base missing, edges to not converge at = ½'s, slight remnant in proc

#3 (1) Orange - Choc - Brown Ch., small cross section of large blade.

#4 (1) F., Dark Gr w/light Gr. Streaks, 2 edge retouches, mes. fragment of unfinished point

#5 (1) F., translucent Br. Ch., Bifacial retouch on 2 edges, and used w/no retouch on

1 DRILL:(1) translucent Br. Ch., small, tip broken off.

4 utilized FLAKES -

(1) R to Pink Qtz. - may have been reformed?, needs a backed knife, edges convex.

(1) Translucent Gr. Ch., small flake

(1) Gr + Tan Ch.

(1) Gr + Tan Ch., needs a knife, concave edge.

(1) Translucent Br Ch. needs naturally backed knife

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY DATE

★ - Addition to Chipped Stone tools -

Planer - chopper - core, - large chert streamcobble, mostly used as planer. (in ground Stone Box)

~~no count still last one~~ Chipped Stone Continued. - WASTE FLAKES 87 total. Count Again !

16 - Tan - may vary

12 - Pink to Red Quartzite

15 - Pink to Tan Chert

4 - White to Gry. Chert

5 - Brown w/Lt. specks Rhyd.

23 - flakes of black, mottled colors.

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect. Size of site

Note - Rose Sprinkle Copied. Note it points are Dated From Quatenary Not this Study Area.

FIELD SAMPLES:

PHOTOS:

REFERENCE:

DU SITE # _____ TOWNSHIP 12S RANGE 9W SECTION 14, NW 1/4 OF NE 1/4
FIELD # 20 PROJECT RBOSP MAP REF USGS, Wolf Cr. Quad, 7½'
LOCATION Perimeter, 300 m. East of SE corner of C-a tract.
SITE TYPE Habitation CULT. AFF. Ute & poss. Fremont RECOM Test or avoid.
SURVEY DATE 6/23/75 BY APO EXCAV. DATE _____ BY _____
STRUCTURES & FEATURES 5 wickiups

POTTERY NONE

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.
Proj. Pts. 5
#1 (1)straight base, corner notch, Br. Pet. Wd. 2.8xl.8x0.4 cm.
#2 (1)fragmentary mid section, base, notches,&stem- not present, Bl. chert.
#3 (1)tip fragment, pink chert, dimensions unkown.
#4 (1)basal frag., concave base,no notches, no stem, Bl. chert, ?xl.2x0.4 cm.
#5 (1)frag. of poss. bi-fercate pt., ID not possitive, Red chert.
Scrapers- 3
(1)snubnose, Bl. chert; (1)side & end, w/ notch, Br. Chert; (1)frag. of steep angle, Br. chert scraper.
Knives-3
(1)complete, symetrical,Br. Pet. Wd.; (1) frag. of symetrical, Red chert; (1) irregular shaped, poorly flaked, Br. chert.
Drills-1 (1)base frag. of white chert drill.
(1) utilized flake, Red- Br. chert, used on 2 side. ILL. 2 & DRAWINGS OF PTS. ON BACK.
USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY T. Bridge DATE 3/3/7

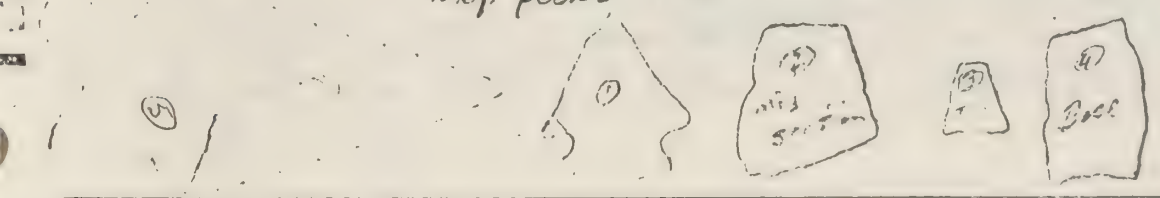
GROUND STONE-list and describe. (1) Hammerstone,minimal use, large river cobble,Gr. meta.

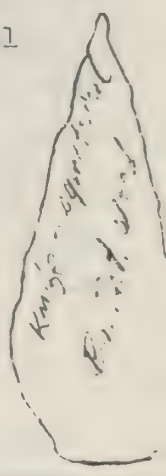
CHIPPED STONE CONTINUED—
Flakes-96

30 Brown petrified wood.	3 pink chert.
25 Reddish brown chert.	1 black chert.
24 white chert.	1 gray chert.
10 volcanic.	1 pink to clear chalcedony.
	1 white quartzite.

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect.
Relationship of stone tools to waist flakes; a very positive correlation of tool material to waste flake material exists at this site. The only tool material that does not have a large number of flakes of the material is black chert. Also the flakes of Br. pet wood,reddish brown chert, and white chert are of both large and small size --- probably indicating that the tools made of this material were made at the site, whereas, tools of black chert may have been made elsewhere, and then brought and left at this site.

Proj. points 1-5





FIELD SAMPLES: None REFERENCE:
PHOTOS: None

AR Site # _____ TOWNSHIP 43 RANGE 22 SECTION 5 SW1/4 OF SW 1/4
FIELD # 46 PROJECT BOOST MAP REF Wolf Gate Ut. USGS
LOCATION 84 Mesa
SITE TYPE Horticultural CULT. AFF. Late ? RECOM Test ... Avoid
SURVEY DATE 7/1/75 BY AFO EXCAV. DATE _____ BY _____
STRUCTURES & FEATURES
1 Standing wickiup, one circle; rock slabs (8-10' Dia.) w/ artifacts
POTTERY NONE

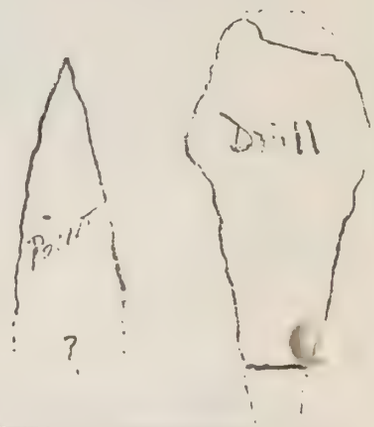
BEADS - 2 white glass.

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.
POINT - (1) 4-Br. P.W, w/Bk. specks, Tip Fragment, ID unknown
DRILL - (1) Gr. Ch., Tip missing + part of base missing.
2 - UTILIZED FLAKE - (1) fragment of Gr. Ch, utilized edge has dark "oily" appear, under 36X
(1) Gray-White Qtz, large flake, used as knife or scraper (in Ground Stone Box)
Examined Core - Gray Chert
11 FLAKES - 3 Dark Red Ch.,
3 Brown Ch.
2 White Red Chert, porcellanite
1 - Tan Qtz
1 - Br Qtz.
1 - Dark Red Qtz.

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY _____ DATE _____

GROUND STONE-list and describe.
1 - MANO FRAG - Tan Colored SS., Biconcave + Battered Edges
2 - HAMMERSTONES (1) Chert or Chalcedony, White w/ Br + Wh. coloring, Battered all edges, well used and Smooth
(1) Gray Rhyolite, heavily battered all over and, medium to large Hammerstone
2 - Misc. Ground Stone - (1) - Green Qtz., large, Poss. Hammerstone, Chopper, Planer, anvil.
(1) - Purple Qtz - Frag., appears to be ground on more, but very little
1 - NON ARTIFACTUAL - Large fractured Sandstone Cobble, w/ Br. Qtz.

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect. Size of site
See Back Side for artists description of Poss. rock structure. Field notes are lacking on this feature. It does appear to somewhat like a pit house (20' stabilized) if it is, this site is unique to the study area and deserves test excavation.



FIELD SAMPLES:
PHOTOS:
REFERENCE:

DU SITE # _____ TOWNSHIP 15 RANGE 9 W SECTION 13 NE 1/4 OF SE 1/4
FIELD # 86 PROJECT _____ MAP REF Vernal 15' Quad
LOCATION 5 Miles
SITE TYPE poss. temporary CULT. AFF. Fremont RECOM Test, Phase
SURVEY DATE 7/15/85 BY ARCO EXCAV. DATE _____ BY _____
STRUCTURES & FEATURES

POTTERY 3 sherds: 1 B/W sherd, possible Anasazi - intrusive
1 utility sherd with clear, poor grit tempered.
1 plain sherd of a dark, fine grained, fine textured.

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers;utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.
Proj. Pts - 1, (1) F. Gr. Chert, Midsection, poss. graver.

Scrapers - 4
(1) Sandstone, yellow-gray Chert
(1) Side Scraper, F., yellow-gray w/Bl. & Wh. specks, fine retouch
(1) Small F. of Side? scraper, White chert
(1) Triangular Shape, Br. P.W. w/Bl. specks. Bifacial flaking at one point on edge, This is not a point or a scraper, but maybe an unfinished knife.

Who Knows? ?

KNIVES - 3
#1 (1) Triangular shaped, Dark R. - Brown to Black, base appears unfinished.
#2 (1) Rough Triangular, Clear Chal. w/Br. streak, base appears unfinished.
#3 (1) Gr. Wh. F. Side Notched, appears to be unfinished from base to tip.

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY DATE

GROUND STONE-list and describe. (1) Small gray Sandstone and poss. mano, F+BL 6
Chipped Stone continued
Utilized Flake - (1) White Qtz. used as knife

FLAKES (87)
26 - Dark Red Chert
17 - White Chert
15 - Dark Brown + Black Chert
7 - Light Brown w/Black specks, R.T. Wh.
5 - White to Red-Brown Quartzite
3 - Opaque Brown Chert
1 - Chalcedony
1 - Obsidian
13 - Poss. Volcanic, pink and brown w/ white inclusions

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect.
The first two knives listed above are similar in shape, size and flaking technique. This site has been assigned to the Fremont culture on the basis of the 3 sherds and a Sandstone scraper. By association of these two knife types would be assigned to other knives at other sites, where Fremont people seem to have been known another diagnostic Fremont tool may be identified. This is wasteful thinking, but one is worth a try.

FIELD SAMPLES: None
PHOTOS: None
REFERENCE: Fremont Sandstone - Aikens. Fremont, Promontory + Plateau Archaeology

DU SITE # _____ TOWNSHIP 15 RANGE 98W SECTION 17 NE1/4 OF SE 1/4
FIELD # 57 PROJECT X0057 MAP REF USGS Wolf Ridge Quad 7½
LOCATION 84 Mesa
SITE TYPE _____ CULT. AFF. Fremont (via Sherds) RECOM Test or Avoid
SURVEY DATE 7/8/75 BY APO EXCAV. DATE _____ BY _____
STRUCTURES & FEATURES None

POTTERY 9 Sherds, Appears to be Tarmac Gray II T. Bridge

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

Points - 1 (1) F., Bl., Ch, small mid section, ID unprovenience, poss. metaven, p.t.

Scrapers - 5

#1 (1) Small snubnose + side scraper, Gray Chert, the side may have been used as knife, + the end is broken

#2 (1) Notched scraper, Gr Ba. Ch, - complete artifact.

#3 (1) Side Scraper, Gr+Tan Ch, - Fragmentary, made from thin flake, may have been used as knife

#4 (1) F., Bl. Ch, retouched along small curved edge

#5 (1) Br. P.W. w/Bl. spots, close to utilized flake, but some retouch is present.

Knives - 2

#1 (1) Gr. Ch, Very thick Knife frag.

#2 (1) Gr. Ch. F., Same material as other knife, but different knife, this one is much thinner.

Drill - 1 ?

(1) Poss F., Bl. Ch. w/Br. spots, Base only. This may not be a Drill, but is obviously flaked on all unbroken surfaces

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY T. Bridge DATE 3/15/76

GROUND STONE-list and describe. NONE

UTILIZED FLAKES - 6
2 - Bl. Ch.
3 - Gray Tan Ch.
1 - Chalcedony

FLAKES - 63
18 - Gray to Brown Ch. w/some tan banding
16 - Gray + Black Ch., generally poor-ish texture.
14 - Gray tan Ch.
5 - Misc. Bl, Br. Wh. Chert.
4 - Red ch.
3 - Red Quartzite
2 - Br. PW 1 - Obsidian (Small)

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect.

Positive relationship between waste flake material to artifact material, it appears that most the Chipped Stone tools were made at the site.

Note — The tools at this site are either small or have working surfaces that are small. A large # of small utilized flakes were recovered. The tool types are diversified, for instance - Snubnose scrapers, notched scraper, side scraper, poss. drill and knives. I can't help but think these tools were used for delicate finishing jobs, or making small items, they contrast in size alone to other Fremont sites w/Chipped Stone tools. WHY? The presence of ceramics @ this site is also interesting, and may have some relationship to the small tools.

FIELD SAMPLES: REFERENCE:
PHOTOS:

UNIVERSITY OF DENVER SITE IDENTIFICATION CARD

DU SITE # TOWNSHIP 1S RANGE 25W SECTION 7, SW 1/4 OF SW 1/4

FIELD # 93 PROJECT RR05F MAP REF USGS, Wolf Ridge Quad, 7.5'

LOCATION 84 Near-

SITE TYPE Habitation CULT. AFF. UTE RECOM TEST or Avoid

SURVEY DATE 7/17/73 BY BTD EXCAV. DATE BY

STRUCTURES & FEATURES

1 Wickiup

POTTERY None

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

1 - Chopper, red quartzite, does not appear to be intentionally flaked, but the shape is a product of being fire-cracked, perhaps this should be considered a utilized flake? The one remaining lateral surface is dangerously sharp, indicating possible use as knife, but this is only a guess, no obvious pre-

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY DATE

GROUND STONE-list and describe.

1 Mano, low grade red quartzite (almost Sandstone), ½ of mano is broken off. Mano has been shaped on all surfaces by pecking + ? grinding. The one remaining end is heavily battered, projecting the missing portion, this artifact would have been about 10cm. long, and used on the range of 1 handed mano's

ADDITIONAL INFORMATION-Vegetation, H_2O sources, Site description, Topog., Structures or architecture, Site impressions, ect.,

See comments for Site # 146 for artifact description & habitation Site.

FIELD SAMPLES:

PHOTOS: REFERENCE:

UNIVERSITY OF DENVER SITE INVENTORY CARD

DU Site # _____ Township 15 Range 95W Sec. 10 1/1 1/4 of _____ 1/4

Field # 1011 Project _____ Map. Ref. _____

Location Old Town

Site Type Village Cult. Aff. Ute Recom. _____

Survey Date _____ By _____ Excav. Date _____ By _____

Structures and Features

1 Wickiup (Est.)

Pottery

Ute

CHIPPED STONE TOOLS—list in order of: Points, Scrapers, Blades, Drills, Gravers, Utilized Flakes, Flakes. Include: description, material, color, culture if known and sketch if desired.

1 - Points (1) Unnotched, F, Side notched, undet. 1 - Medial base, Tip, portly Base
1 - Scraper (1) Side, Sidescraper, retouched flake, edge angle from ca. 45° to 75°
1 - Knife (1) Bi-Ch. appears to be a cutting forged, large ridge for thumb
1 - Core - Scraper (1) Dark Gr. with chert, exhausted core, also used as scraper
1 - Utilized Flake (1) Translucent Gray Ch. retouched, utilization questionable.

Flakes - 26

10 - Brown to tan Ch. some material used the scraper and exhausted core scraper
5 - Gray Ch.
4 - Dark Gr. Fine grained Ch., some material used knife, beg.
3 - Variegated Ch.
2 - Milky Ch.
1 - white Ch. Source point, 1 - misc. Chert Chip, Flakes

USE BACK SIDE OR EXTRA CARD, IF NEEDED. ANALYZED BY: Tom Childs DATE: 3/26/73

F = Fragment, PW = Petrified Wood, CHAL = Chalcedony, CH = Chert, OB = Obsidian, QTZ = Quartzite, V = Volcanic, SS = Sandstone, LS = Limestone, Y = Yellow, R = Red, BR = Brown, BL = Black, WH = White, GR = Gray, P = Pink, POSS = Possible, U = Ute, FRE = Fremont, AR = Archaic, W = Woodland.

Ground Stone — List and Describe.

Misc. Ground St. (1) The ground surfaces are on two sides + only limited pecking is present along edge of the ground surface. Rock is also pitted + general weathering.

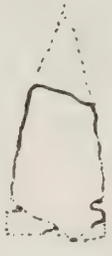
Fine grain S. to Siltstone, Light Gr. in Color, 10.5 x 10.0 x 1.5 cm. Grinding surfaces are not conformal, nor well developed. This tool appears to have been used (1.) as the stationary or lower stone in a milling stone (Mano + Metate) and (2.) as the movable rock which ground earlier (Lower) tool.

Additional Information — Vegetation, Water Sources, Site Description, Topog., Structures or Architecture, Site Impressions, Site Size, etc.

The lithic analysis supports the seasonal use theory — A basic correlation of ten is present between the waste flake material, and the chipped stone tool material of the site.

All arrow points are Non Corticol —

Flakes indicate that projectiles and tool preforms were brought into the area, and tools were fashioned for specific jobs.



only Proj. pt. from Site.

Field Samples: None Reference:

Photos: None

DU SITE # TOWNSHIP 15 RANGE 9E SECTION 31 NW 1/4 OF NE 1/4
FIELD # 125 PROJECT K BASE MAP REF 7.5 Snake Arroyo Creek Quad-USGS
LOCATION SITE TRACT
SITE TYPE Lithic Scatter TR CULT. AFF. RECOM Test
SURVEY DATE Aug 1982 BY EXCAV. DATE BY
STRUCTURES & FEATURES
1 cairn
POTTERY
none

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

P1 - 3 - 1 - Tip of Stemmed pt, QTZ.
1 - Base of Pt. C.
1 - Base of Corner Notched pt. CHAL

S2 - 4 - 1 - Snapped, F, pw.
1 - Edge, C
1 - Side scraper on reverse flake, Y, C
1 - Side scraper - pw - Y

Blades - 3 - 1 - C
1 - Br - QTZ

Drills - 1 - 1 - R QTZ (F)
Utilized Fl - 1 - Y - CHAL
Gravers - 1 - WH - C
Flakes - 7 - QTZ 9 - CHAL
21 - C 1 - WH
1 - OBS

USE BACK SIDE OR EXTRA CARD IF NEEDED.

ANALYSED BY J. LeFree DATE 9/15/82

GROUND STONE-list and describe.

Manos - 3 2 - R - QTZ
1 (F) R - SS

1 Mano/Hammerstone R - Basalt, Cobble, Cortex, QTZ

Core - 1 - C

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect. ELEVATION

1 - Ephemeral Drainage 100 M. due W. of Snake Spring Drainage, Good Size, 100 meters due W of Snake Spring Drainage RD - CN
Sandy-Slope Ridge

FIELD SAMPLES:
PHOTOS: REFERENCE:

Box 3 - Cor Stone

DU SITE # TOWNSHIP 15 RANGE 3W SECTION 1 W 1/4 OF NE 1/4
FIELD # 186 PROJECT RBOSP MAP REF U.S.G.S. 7.5 - SERIES BARNES CREEK QUAD.
LOCATION OFF-TRACT
SITE TYPE LITHIC SCATTER CULT. AFF. RECOM TEST
SURVEY DATE 7-5-75 BY EXCAV. DATE BY
STRUCTURES & FEATURES

POTTERY

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

2 - Pt. Bases:
1. GREEN SIDE NOTCHED, BR, CHALTRIANGULAR BLADE, - 2.2 X 1.2 X (F)
2. CONCAVE BASE, CORNER NOTCHED STEM, EXPANDING, BR. CHAL 1.6 X - X (F)
(SEE OTHER SIDE)

3 Bifaces: 1 F. SHOULDERED SCRAPER, p.w.d.
1 UNIFACIALLY FLAKED, OBVERSE UNIF. FLAKED REVERSE, GREENISH CH.
1 UNIFACE SIDE SCRAPER, Y. CH

1 Drills - (F) BIFACIALLY FLAKED, BR, CHAL
1 Tool Frag. - BR, CHAL
1 UTILIZED FL. - GR - CHAL

FLAKES - ~~5~~ 20 - CHAL 1 p.w.d
5 - ~~CHERT~~ CT2. 9 - CHAL

CORE - WH - CH

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY B.J. LEFFLER DATE 3-11

1. R SS (F)
MANOS 2 1 BI - CH. (F)

GROUND STONE-list and describe.

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions, ~~ect.~~ Size of site.
WATER SOURCE - YELLOW CREEK - 500 E. OF SITE.
VEG - PINYON, SAGE, JUNIPER

FIELD SAMPLES:
PHOTOS: REFERENCE:

DU SITE # _____ TOWNSHIP 15 RANGE 18W SECTION 10 SE 1/4 OF NE 1/4
FIELD # 146 PROJECT REOP MAP REF ?
LOCATION Off Tract
SITE TYPE HABITATION CULT. AFF. Ute RECOM Test or Avoid
SURVEY DATE 7/30/76 BY HPG EXCAV. DATE _____ BY _____
STRUCTURES & FEATURES
2 collapsed Wickiups
POTTERY
No Sherds, but 1, large, light blue bead, White fire cracked fragments, Dk. Brn

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

Points (1) Dark Br. to Bl. Ch., Basal F., No Notches, Appears to be base of Triangular blade Base: Straight to slight concave

Knife (1) F. of large knife, Tan Ch. grading into dark Brown Ch., Bifacially flaked on 2 edges.

Chopper-Core (1) - High quality Dark Br. to Bl. Ch., Prepared core, Little or no cortex remaining.

Utilized Flake (1) - Dark Br. Ch. often banding - very small utilized surface, used as scraper

Flakes - 36

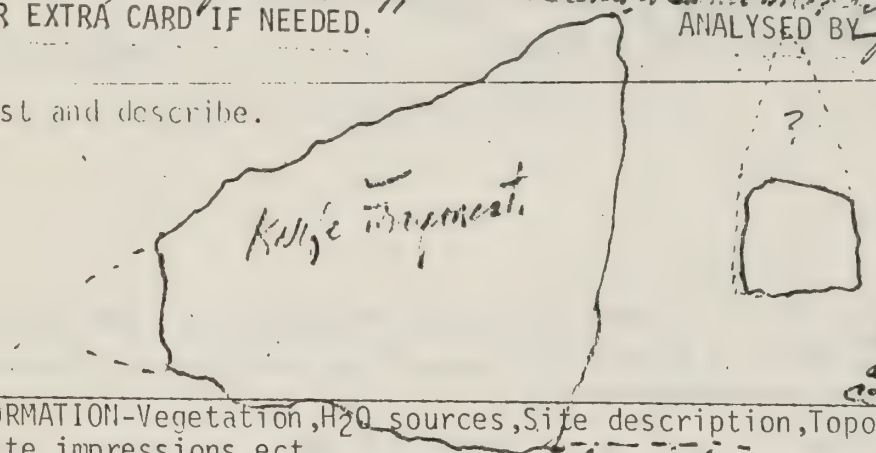
10 - gray chert
7 - Pink to light Brown w/Bl. Spots Pet. Ch. (?)
3 - Dk. gray to Black chert
2 - Light gray, apparently Quartzite, maybe Obsidian
1 - Dark Br. to Bl. Ch., this is from the chopper-core and is same material as the point fragment.
1 - Dark Br. Ch. w/Wh. inclusions
1 - Wh. Chert, small flake

USE BACK SIDE OR EXTRA CARD IF NEEDED.

ANALYSED BY J. Buck DATE 3/17/76

GROUND STONE-list and describe.

NONE



Although complete the remaining portion of this point suggests a triangular blade w/no notches, and a straight to slight concave base

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect.

It seems strange that a semi-permanent habitation site, so few tools were found. Perhaps the wickiups of Inactive collectors. The tools - a chopper + a knife, are large tools. The point fragment appears to be made from a flake from the core. The blue bead and and the 2 Wickiups indicate an historic origin for this site. Because of the historic Ute association, at the time of site occupation, the material culture was most probably a combination of Shosho + Ute traits. Both metal knives and axes used, they probably were not leave them behind, even if broken. Another possible reason for the low # of tools.

Under flakes - the two pieces of light Gy Qtz or V. rock has quartz X-tals that are similar to the X-tals of quartz found in the temper of sherds at Site #51, a Frequent Site.

FIELD SAMPLES: None
PHOTOS: None

REFERENCE:

UNIVERSITY OF DENVER SITE INVENTORY CARD

DU SITE # TOWNSHIP 25 RANGE 99W SECTION 14 NE1/4 OF NW 1/4

FIELD # 65 PROJECT RB052 MAP REF USGS Hell Roaring Canyon, Colo.

LOCATION Pennington

SITE TYPE Chipping Sta + Poss Campsite CULT. AFF. FREMONT RECOM TEST OR AVOID

SURVEY DATE 7/27/72 BY RPC EXCAV. DATE BY

STRUCTURES & FEATURES NONE

POTTERY NONE

CHIPPED STONE TOOLS-list in order of:Points,Scrapers,Blades,Drills,Gravers,utilized flakes,flakes.Include:description,material,color,culture if known&sketch if desired.

POINTS - 3

#1 (1) Complete; TAN Chert. Straight, expanding Base; Corner notched; triangular + serrated blade; FREMONT 3.0 x 1.1 x 0.4 cm

#2 (1) F; Wh. Ch; Corner notch, expanding base?; serrated blade. Poss. Fremont, but fragmentary.

#3 (1) F; Light R-Br. Ch; No Notches; Straight to Slightly concave base, looks like a small

KNIVES - 4

#1 (1) Large, Dark red, bifacial flaked on all edges, well made; 8.0 x 3.9 x 1.9 cm.

#2 (1) F; Gr w/wh. speckled ch; tip frag; bifacial ?? on edge, unifacial another.

#3 (1) F; R. Ch.; Tip frag, poss. graver.

#4 (1) F; Bl ch.;

UTILIZED FLAKE-1

(1) F; Br. P.W. slight bifacial flaking resulting from use as knife + poss. scraper.

(1) F; Gr. Ch., poss. knife tip.

Core (1) Expended, small, gray chert.

USE BACK SIDE OR EXTRA CARD IF NEEDED. ANALYSED BY T. Christopher DATE 3/11/73

GROUND STONE-list and describe.

Mano (1) 1/2; V. Crs, wedge Shape, 3 ground faces, pecked and ground to shape. Also heavily battered on

Hammerstone (1) Clear to gray colored chalcedony, battered over almost entire surface

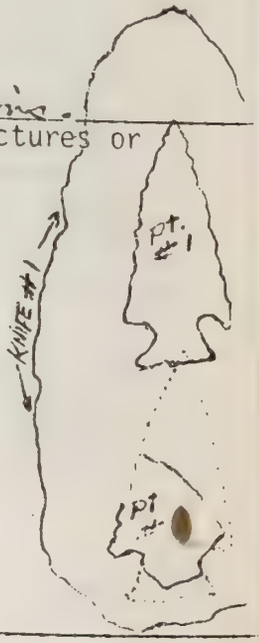
FLAKES - 114

93 - Small wh. Ch.
12 - reddish, Fireworked, Pinkish Ch.
1 - gray Qtz.
3 - Dark Gray Qtz. or Qtzite, some with small flakes removed
1 - Black Ch.
2 - Chalcedony
2 - gray ch.

ADDITIONAL INFORMATION-Vegetation,H_2O sources,Site description,Topog.,Structures or architecture,Site impressions,ect.

Flakes to tools, Material: Most of the Small wh. Ch. flakes are the same material as point #2. Point #3 + knife #3 are similar to the lt R, Br. + P. Ch. flakes. The Bl. ch flake matches w/knife #4. Both point #1+2 are Fremont. The majority of the flakes at this site appear to be associated with Fremont. Knife #3 bears resemblance to knives 1+2 from Site # 86, another Fremont Site.

1/2 of a mano was found at this site - wedge shaped, well shaped, and proportioned, the missing half, would be at least 16 cm. long, the lower edge manage of rounded means. This appears to be a ceremonial Fremont site, perhaps as the mano is an indicator of corn cultivation? I think this is a good site to test - we might be able to add to the definition of the Fremont Aboriginals to a in the Piceance Basin



FIELD SAMPLES: None

PHOTOS: None

REFERENCE:

Proj. Pts 1+2 - Ericksen, Typos 3E + 1F respectively.

APPENDIX C

PROJECTILE POINT DESCRIPTIONS

APPENDIX C - PROJECTILE POINT DESCRIPTIONS

TYPE 1 Triangular, unnotched points

Group 1-a Number of specimens - 6. See Figure A-1

Material - Quartzite, Chalcedony

Measurements (cm)

	Largest	Smallest
Length	2.8	1.6
Width	1.6	1.5
Thick.	.47	.27

Site number(s): 140 (P)[1]; 190 (S)[2], 109 (S); (T)[3] 41, 141, 168

Description: Unnotched, triangular blade, straight base, straight to convex sides.

Comments: Similar to Cottonwood Triangular (Aikens, 1970 Hogup Cave). These are in the range noted by Aikens; our samples are in the small to medium range. The Cottonwood samples lie in Hogup Cave Unit III, A.D. 400-1350, association - Fremont.

Group 1-b Number of specimens - 11. See Figure A-1

Material - petrified wood, chert

Measurements (cm)

	Largest	Smallest
Length	2.2	2.1
Width	1.0	1.2
Thick.	.15	.2

[1] Recovered from a primary site.
[2] Recovered from a secondary site.
[3] Recovered from a tertiary site.

Site number(s): 20 (P), 23 (P), 27 (P), 65 (P), 140 (P), 146 (P), 45 (S)

Description: Unnotched, triangular blade, concave base, straight to convex sides, well made. Thin flakes, plano-convex or lenticular cross-sections.

Comments: Similar to Cottonwood. Triangular, with concave base. Some specimens are very thin plano-convex, finely flaked. Similar specimens discussed by Gunnerson (1957, p. 23, Figure 10, p. 26) although they are larger. Gunnerson (1957) calls them knife blades. Our (smaller) specimens are undoubtedly projectile points. Probably later in time. Shulter and Shulter (1963) referred to them as "A widely distributed late type in the West." Also see Taylor (1957, Fig. 53, Central Utah).

Group 1-c Number of specimens - 4. See Figure A-1

Material - Chert, Quartzite

Measurements (cm)

	Largest	Smallest
Length -	3.5 - 3.8	2.9
Width -	1.8	1.8
Thick. -	.45	.45

Site number(s): 15 (T), 45 (S), 65 (P), 165 (T) (Serrated)

Description: Unnotched, convex base, convex sides, basal thinning.

Comments: This type is noted in John P. Marwitt (1968 - Pharo Village), and is in his class B. Our points fall in the medium range to small in comparison with his. The Pharo Village site is described by Marwitt as "best classified as Sevier-Fremont" although he sees relationships in material culture with Eastern Fremont. His C-14 datings range from A.D. 1190± 80 to probably A.D. 1260± 90 for this site.

TYPE 2 Side-notched

Group 2-a Number of specimens - 10. See Figure A-1

Material - Quartzite, obsidian, chert, petrified wood

Measurements (cm)

	Largest	Smallest
Length -	2.7	1.55
Width -	1.95	1.2
Thick. -	.24	.37

Site number(s): 2 (T), 27 (P), 124 (S), 24 (P), 101 (T), 195 (T), 55 (T), 116 (S), 144 (P), 194 (S)

Description: Triangular blade, straight to convex sides with small side notches, notched or indented straight or concave base giving an "eared" type effect. Two specimens are made on small plano-convex flakes, edge retouched on one side and extensive retouch on the convex side. Base is the widest part of point.

Comments: These points fall in the widespread Desert side-notched category which is widespread throughout the southwest, Texas, western Oklahoma, the Great Basin and California. Dates for these range between A.D. 400 and 1350 in the Hogup Cave stratum, and continue up to historic times in association with Shoshonean peoples. They are common in association with Fremont sites. (see Aikens 1970; Fowler 1966; Shutler and Shutler 1963).

Group 2-b Number of specimens - 3. See Figure A-1

Material - Quartzite, Chert

Measurements (cm) (only one measureable)

Length - 2.2

Width - 1.2

Thick. - .3

Site number(s): 23 (P), 180 (T), 160 (T)

Description: Triangular blade, convex sides with side notching, concave base. Widest point is at base on one specimen, other is slightly wider above notches, well made.

Comments: The concavity of the base is the main distinguishing feature from the Type 2-a points. Taylor (1957) reports that they are common in Utah sites. Hunt (Figure 17) sees these and Type 2-e as a Fremont or early Shoshonean trait (see Taylor 1957; Sharrock 1966).

Group 2-c Number of specimens - 1. See Figure 2.5.2-3

Material - Chert

Measurements (cm)

Length - 2.14

Width - 1.75

Thick. - .3

Site number(s): 154 (S)

Description: Triangular, straight. Slightly convex sides with side notching, concave base dropping sharply at corners to form downraking tangs. Base is widest part of point. Well made.

Comments: This is at present unidentifiable. However, a similar type with the downraking tangs, but no side-notching has been recorded in Fowler (1966; Plate 1).

Group 2-d Number of specimens - 1. See Figure A-1

Material - Chert

Measurements (cm)

Length - 1.65

Width - 1.2

Thick. - .2

Site number(s): 23 (P)

Description: Small triangular blade, straight sides with side notching, straight base, plano-convex cross-section, both sides retouched carefully and extensively. Base is widest part of point.

Comments: Another similarity to the Desert side-notched point. Also considered late Fremont or early Shoshonean. (Taylor 1957; Breternitz 1970).

TYPE 3 Corner Notched Points

Group 3-a Number of specimens - 3, 2 Base Fragments. See Figure A-2

Material - Chert

Measurements (cm)

	Largest	Smallest
Length	4.5 - 4.8	2.7 - 2.9
Width	2.84	1.7
Thick.	.48	.38

Site number(s): 116 (S), 73 (T), 129 (P), 6 (T), 27 (P)

Description: Triangular blade, straight to convex sides, slightly expanding stem, indented base. Large specimen is plano-convex with very little retouch on one side, and is flakes well on convex side.

Comments: This is an older type point considered to be a dart point. The deep indentation, or bifurcation, as well as the corner notching and size put this in the category of Elko Split-stem (Aikens 1970). Dates for these as recorded in Hogup Cave range from the unit defined by Aikens as 6400 B.C. to 1250 B.C. and are found in most of the strata of this unit. Similar specimens were found in Danger Cave by

Comments (Continued)

J. Jennings, and are classified in the Wendover series as W20, W29, and W31 (Aikens 1970; J. Jennings 1957).

TYPE 4 Corner Notched

Group 4-a Number of specimens - 2. See Figure A-2

Material - Chert, Quartzite

Measurements (cm)

	Largest	Smallest
Length -	3.8 - 4.2	2.4 - 2.8
Width -	2.25	1.9
Thick. -	.5	.43

Site number(s): 27 (P), 37 (T)

Description: Large points, convex sides. Low corner notching with one notch slightly higher than the other. Straight to slightly concave base. Large point is crudely flaked.

Comments: These fall into the category of Elko Corner-notched as defined by Aikens (1970). Similar specimens can be found in the Danger Cave data classified into the Wendover Series: W18, W19, W20, W21, W22, W23, W24. Dates range from the time they first appear, 6000 B.C. to A.D. 1350 at Hogup Cave, and are of considerable variety. Dart points. (Aikens 1970; J. Jennings 1957)

Group 4-b Number of specimens - 2. See Figure 2.5.2-4

Material - Petrified Wood, Quartzite

Measurements (cm)

	Largest	Smallest
Length -	2.6 - 2.7	2.28
Width -	2.1	1.75
Thick. -	.42	.4

Site number(s): 20 (P), 151 (S)

Description: Triangular, straight to convex base. Both have one straight side and one concave side, expanding stem with large, wide, corner notching. Crudely flaked.

Comments: These poorly formed and crudely flaked points are apparently rare in most sites. A similar specimen of the same type can be found in Gunnerson (1957; Figure 14, specimen ff), but is not identifiable as Fremont. These points, obviously not common in this area, have been classified only due to the fact that there were two, and in the future, more may be discovered with the need for comparison. (Gunnerson 1957).

Group 4-c Number of specimens - 13. See Figure A-2

Material - Obsidian, Chert (transparent, white)

Measurements (cm)

	Largest	Smallest
Length -	3.15	1.9 - 2.0
Width -	1.6	1.15
Thick. -	.3	.3

Site number(s): 48 (T), 164 (S), 186 (P), 64 (S), 65 (P) (Serrated), 137 (T), 11 (T), 140 (P), 18 (P), 193 (T), 90 (S), 66 (S)

Description: Triangular, straight to slightly convex sides, straight to convex base with expanding stem, corner notching, well made.

Comments: These well-made, finely shaped and flaked points are found in occupation areas of some Fremont sites in the Dinosaur region (Breternitz, 1970) and dates for their association with Fremont material culture at Cub Creek are A.D. 1000-1150. Gunnerson (1957) also records them at Fremont sites in eastern Utah (Figure 14, specimens a-e). A widespread type (Breternitz 1970; Gunnerson 1957).

Miscellaneous Points not yet identified are shown on Figure A-3.

190 41

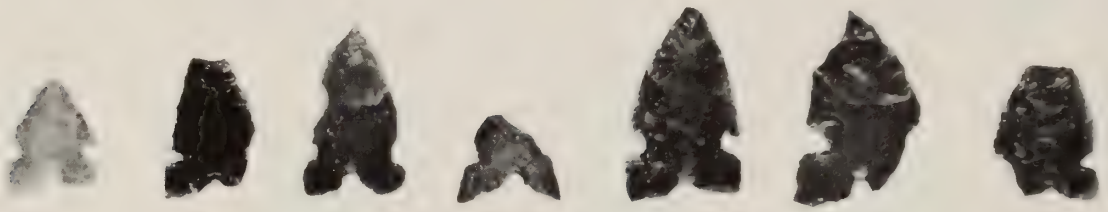
1-a

45 23 23

1-b

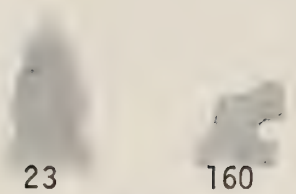
45

1-c



27 124 2 24 195 55 116

2-a



23 160

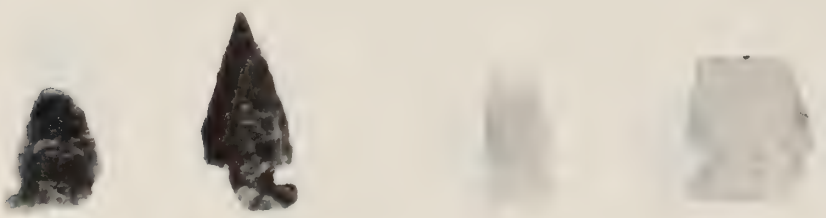
2-b

154

2-c

23

2-d



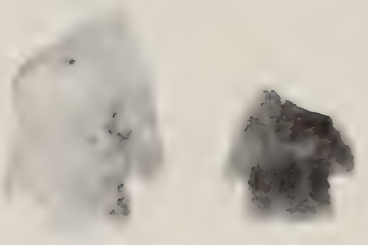
26 44 152 165

2-e

PROJECTILE POINTS (ACTUAL SIZE)

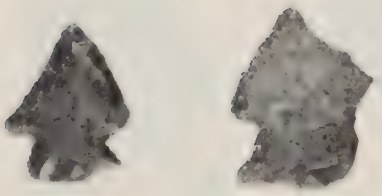
116 73 129

3-a



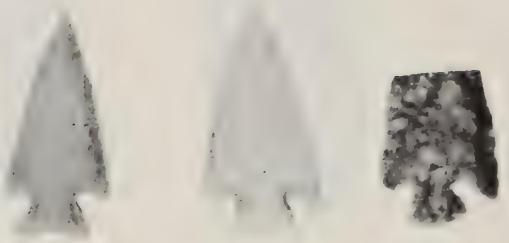
27 37

4-a



20 151

4-b



65 64 137

4-c

11 140 18 186 90 66

4-c

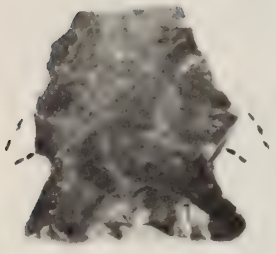
PROJECTILE POINTS (ACTUAL SIZE)

191

113

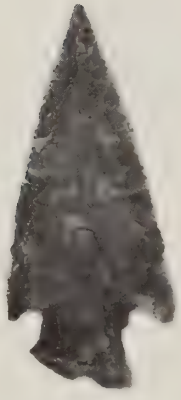
87

78



188

36



81

175

MISCELLANEOUS POINTS

NOT AS YET IDENTIFIABLE

PROJECTILE POINTS (ACTUAL SIZE)

2.5.3 Revegetation

The revegetation program for RBOSP Tract C-a is designed to investigate current revegetation technology and develop a plan to successfully reestablish a plant community on the processed oil shale disposal pile in accordance with the environmental stipulations as described in the Federal Register, Volume 39, Number 230, Part 3, Oil Shale Lease Environmental Stipulations. This revegetation plan will be developed as a result of extensive field experiments and laboratory studies designed to provide data pertinent to Tract C-a.

The location of the revegetation experimental plots is in the southeast corner of Tract C-a as shown in Figure 2.5.3-1, Progress Report 5 - Summary. The revegetation test sites were selected to represent opposing slope aspects at elevations between 7100 and 7200 ft with slopes approximating 3:1. Trials in each of the 2 subsequent years will utilize a single site on the slope having the most extreme drought conditions.

Several other revegetation studies are currently being conducted in the Piceance Creek Basin. These studies deal both with problems of revegetating processed oil shale and with selection of appropriate revegetation methods for vegetation types similar to those existing on Tract C-a. Results from these studies will be analyzed and incorporated into the overall revegetation plan to successfully reestablish a plant community on the processed oil shale disposal pile on Tract C-a.

2.5.3.1 Objectives

No changes in objectives have occurred since Progress Report 5 - Summary. See section 2.5.3.1 in Progress Report 5 - Summary for objectives of the revegetation studies.

2.5.3.2 Methods

A detailed description of methods utilized in the revegetation program is presented in Section 2.5.3.2 of Progress Report 4 - Summary. No changes have been implemented since this report was released except for the deletion of snowberry (Symphoricarpos oreophilus) from the list of plant species to be seeded on the revegetation plots.

2.5.3.3 Results

The RBOSP revegetation test plots were prepared and seeded

during the period of November 3-14, 1975. See Section 2.5.3.3, Progress Report 5 - Summary for a detailed account of the procedures involved.

Surface soils from the revegetation test plots were potted in December, 1975. Soil samples were spread over a sterile potting medium to a depth of 1.27 cm (1/2 in), watered and maintained at a minimum night temperature of 15.5°C (60°F). Seed germination has occurred and the emerged seedlings have been transplanted to separate containers. These seedlings will be grown to a stage at which identifications can be made to aid in identifying emerging seedlings on the test plots.

The six species of grasses planted in the revegetation test plots (see Table 2.5.3-1, Progress Report 4 - Summary) are also being grown in the greenhouse so that voucher specimens of each grass species at various vegetative stages will be available. These voucher specimens will aid in identification of the emerged seedlings on the revegetation plots in the spring of 1976.

Soil moisture determinations of soil samples collected prior to seedbed preparation were conducted and reported in Tables 2.5.3-3 and 2.5.3-4, Progress Report 5 - Summary. A more accurate accounting of soil moisture relationships will be gained as more seasonal soil moisture data are compiled during the course of the revegetation studies.

The earliest results of the on tract revegetation experiments will be collected in the spring of 1976. These results will be analyzed by methods discussed in detail in Section 2.5.3.3 of Progress Report 5 - Summary.

2.54 Toxicology

Toxicology studies are not a part of the environmental baseline studies. They were discussed in Section 9, Chapter 2 of the DDP.

2.5.5 Trace Metals

Determination of heavy metals concentrations in soils from the study area is being made as a part of the soils survey (Section 2.5.1). Analyses of soil samples taken earlier from the study area are currently underway. Results of these and other soil samples analyses will be available after the seventh quarter of study. When these data become available, additional trace metal analyses will be done on plants and animals, if the data indicate that they are advisable.

2.5.6 Visibility Studies

Joint visibility studies are discussed in Section 2.2.3.5b of this report.

2.5.7 Seismicity

The results of the seismicity study were presented in Progress Report 3 - Summary. No additional work has been done.

2.5.8 Paleontological Survey

Results of paleontological studies were reported in Progress Report 5 - Summary. No additional work was done during the winter quarter.

ARCHAEOLOGICAL SITE AND
SITE CLUSTER LOCATIONS

R 99 W

DUCK CREEK

LITTLE DUCK CREEK

BIG DUCK CREEK

84 ME

R 98 W

SITE CLUSTER IV

SITE CLUSTER III

T 1 S

SA

DUCK CREEK

CREEK

GULCH

TRACT C-a

SITE CLUST

0 2

MILES

GULCH

ELDER

BOX

RYAN

STAKE

SPRING

SITE CLUSTER II

SITE CLUSTER I

ARCHAEOLOGICAL SITE CLUSTERS

LEGEND

■ PRIMARY
● SECONDARY
△ TERTIARY

A - ARCHAIC
F - FREMONT
I - INDETERMINATE
U - UTE

GULF-STANDARD INDIANA

RIO BLANCO OIL SHALE PROJECT

TRACT C-a

RIO BLANCO COUNTY, COLORADO

COMPILED FROM USGS 7½' QUADS

1. SAGEBRUSH HILL
2. WOLFRIDGE
3. CALAMITY RIDGE
4. BARCUS CREEK

4/13/76

CALAMITY RIDGE

Calamity Ridge

Thompson Spring

Trail

Canyon

Creek

Spring

Hill

Indian Springs

Red Hill

Drill Holes

Phils Mesa Wilderness Area

Burchard Draw

Little Duck Creek

Duck Creek

Barcus Creek

North Fork

Middle Fork

East Fork

Greasewood Creek

North Rifle

Rifle

Dam

123

120

121

122

124

91

R 98 W

R 97 W

T 1 N

194

196

192

193

188

187

186

166

156

157

154

155

148

147

159

146

153

118

98

99

140

164

141

142

144

130

145

T 1 S

T 2 S

84 MESA

TRACT C-a

102 101 100 97 95 94 10 11 12 13 103 104 34 5 6 9 33 45 8 15 16 7 4 29 14 53 54 56 43 38 28 44 89 30 32 25 2 24 110 108 80 47 107 109 3 90 82 84 83 81 72 41 42 40 71 70 35 36 37 39 20 66 67 65 50 52 55 1 64 183 19 184 51

ARCHAEOLOGICAL SITES

LEGEND

- ■ PRIMARY
- ● SECONDARY
- △ TERTIARY

GULF-STANDARD INDIANA

RIO BLANCO OIL SHALE PROJECT

TRACT C-a

RIO BLANCO COUNTY, COLORADO

COMPILED FROM USGS 7½' QUADS

1. SAGEBRUSH HILL
2. WOLFRIDGE

T 2 S

R 97 W